

## SEQUENCE LISTING

<110> Jacobs, Kenneth  
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Genetics Institute, Inc.

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<170> PatentIn Ver. 2.0

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&lt;221&gt; UNSURE

&lt;222&gt; (87)

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Ile Cys Lys Lys Lys Cys Lys Pro Glu Glu Met His Thr Lys Thr Thr
 35             40             45

Arg Ile Ser Thr Val Thr Ala Thr Thr Val Asn Asn Asn Phe Asp Asp
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&lt;400&gt; 3

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&lt;222&gt; (255)

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Leu Ala Gly Thr Gln Gly Leu Val Thr Asp Thr Arg Ala Ala Pro Leu  
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Thr Pro Ile Gly Thr Pro Leu Pro Ser Ala Ile Pro Ser Gly Tyr Cys  
 65 70 75 80

Ser Gln Asp Gly Gln Thr Gly Arg Gln Pro Leu Pro Pro Tyr Thr Pro  
 85 90 95

Ala Met Met His Arg Ser Asn Gly His Thr Leu Thr Gln Pro Pro Gly  
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Pro Arg Gly Cys Glu Gly Asp Gly Pro Glu His Gly Val Glu Glu Gly  
 115 120 125

Thr Arg Lys Arg Val Ser Leu Pro Gln Trp Pro Pro Pro Ser Arg Ala  
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Lys Trp Ala His Ala Ala Arg Glu Asp Ser Leu Pro Glu Glu Ser Ser  
 145 150 155 160

Ala Pro Asp Phe Ala Asn Leu Lys His Tyr Gln Lys Gln Gln Ser Leu  
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Pro Ser Leu Cys Ser Thr Ser Asp Pro Asp Thr Pro Leu Gly Ala Pro  
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Ser Thr Pro Gly Arg Ile Ser Leu Arg Ile Ser Glu Ser Val Leu Arg  
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Asp Ser Pro Pro Pro His Glu Asp Tyr Glu Asp Glu Val Phe Val Arg  
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Asp Pro His Pro Lys Ala Thr Ser Ser Pro Thr Phe Glu Pro Leu Pro  
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Pro Pro Pro Pro Pro Pro Pro Ser Gln Glu Thr Pro Val Tyr Xaa Met  
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Asp Asp Phe Pro Pro Pro Pro Pro His Thr Val Cys Glu Ala Gln Leu  
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Asp Ser Glu Asp Pro Glu Gly Pro Arg Pro Ser Phe Asn Lys Leu Ser  
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Glu Asn Leu Asp Arg Arg Glu Arg Val Val Leu Gly Ile Leu Ala Asn  
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 Tyr Leu Ser Glu Glu Gln Leu Gln Asp Tyr Gln His Phe Val Lys Met  
 625 630 635 640  
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Phe Ile Thr Ala Phe Cys Phe Phe Phe Gly Thr Ala Phe Tyr Val Ser  
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<213> Homo sapiens

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2178

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&lt;211&gt; 487

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 11

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Leu Val Gln Leu Ala Ala Arg Leu Arg Pro Ala Leu Cys Asp Thr Leu
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Ile Thr Val Gly Ser Gln Glu Phe Pro Ala His Ser Leu Val Leu Ala
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Gly Val Ser Gln Gln Leu Gly Arg Arg Gly Gln Trp Ala Leu Gly Glu
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Gly Ile Ser Pro Ser Thr Phe Ala Gln Leu Leu Asn Phe Val Tyr Gly
  65              70             75             80

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Glu Ser Val Glu Leu Gln Pro Gly Glu Leu Arg Pro Leu Gln Glu Ala
      85              90             95

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Ala Arg Ala Leu Gly Val Gln Ser Leu Glu Glu Ala Cys Trp Arg Ala
  100             105            110

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Arg Gly Asp Arg Ala Lys Lys Pro Asp Pro Gly Leu Lys Lys His Gln
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Glu Glu Pro Glu Lys Pro Ser Arg Asn Pro Glu Arg Glu Leu Gly Asp
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Pro Gly Glu Lys Gln Lys Pro Glu Gln Val Ser Arg Thr Gly Gly Arg  
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 165 170 175

Met Ala Gly Ala Thr Gln Glu Ala Gln Gln Glu Gln Thr Arg Ser Lys  
 180 185 190

Glu Lys Arg Leu Gln Ala Pro Val Gly Gln Arg Gly Ala Asp Gly Lys  
 195 200 205

His Gly Val Leu Thr Trp Leu Arg Glu Asn Pro Gly Gly Ser Glu Glu  
 210 215 220

Ser Leu Arg Lys Leu Pro Gly Pro Leu Pro Pro Ala Gly Ser Leu Gln  
 225 230 235 240

Thr Ser Val Thr Pro Arg Pro Ser Trp Ala Glu Ala Pro Trp Leu Val  
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Gly Gly Gln Pro Ala Leu Trp Ser Ile Leu Leu Met Pro Pro Arg Tyr  
 260 265 270

Gly Ile Pro Phe Tyr His Ser Thr Pro Thr Thr Gly Ala Trp Gln Glu  
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Val Trp Arg Glu Gln Arg Ile Pro Leu Ser Leu Asn Ala Pro Lys Gly  
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 305 310 315 320

Leu Pro Gln Gly Pro Ala Gln Leu Ser Pro Gly Glu Met Glu Glu Ser  
 325 330 335

Asp Gln Gly His Thr Gly Ala Leu Ala Thr Cys Ala Gly His Glu Asp  
 340 345 350

Lys Ala Gly Cys Pro Pro Arg Pro His Pro Pro Pro Ala Pro Pro Ala  
 355 360 365

Arg Ser Arg Pro Tyr Ala Cys Ser Val Cys Gly Lys Arg Phe Ser Leu  
 370 375 380

Lys His Gln Met Glu Thr His Tyr Arg Val His Thr Gly Glu Lys Pro  
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Phe Ser Cys Ser Leu Cys Pro Gln Arg Ser Arg Asp Phe Ser Ala Met  
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Thr Lys His Leu Arg Thr His Gly Ala Ala Pro Tyr Arg Cys Ser Leu  
 420 425 430

Cys Gly Ala Gly Cys Pro Ser Leu Ala Ser Met Gln Ala His Met Arg  
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Cys Pro Ser Ser Ser Thr Thr  
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<212> DNA

<213> Homo sapiens

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<210> 13

<211> 763

<212> PRT

<213> Homo sapiens

&lt;400&gt; 13

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Leu Trp Asp Tyr Ile Asp Gly Ile Leu Ile Lys Thr Phe Ile Val Gly
      20              25              30

Cys Lys Leu His Ala Leu Phe Thr Leu Ala Gln Ala Glu Asp Ser Val
      35              40              45

Phe Val Ile Val Asn Lys Glu Lys Pro Asp Ile Phe Gln Leu Val Ser
      50              55              60

Val Lys Leu Pro Lys Ser Ser Ser Gln Glu Val Glu Ala Lys Glu Leu
      65              70              75              80

Ser Phe Val Leu Asp Tyr Ile Asn Gln Ser Pro Lys Cys Ile Ala Phe
      85              90              95

Gly Asn Glu Gly Val Tyr Val Ala Ala Val Arg Glu Phe Tyr Leu Ser
      100              105              110

Val Tyr Phe Phe Lys Lys Lys Thr Thr Ser Arg Phe Thr Leu Ser Ser
      115              120              125

Ser Arg Asn Lys Lys His Ala Lys Asn Asn Phe Thr Cys Val Ala Cys
      130              135              140

His Pro Thr Glu Asp Cys Ile Ala Ser Gly His Met Asp Gly Lys Ile
      145              150              155              160

Arg Leu Trp Arg Asn Phe Tyr Asp Asp Lys Lys Tyr Thr Tyr Thr Cys
      165              170              175

Leu His Trp His His Asp Met Val Met Asp Leu Ala Phe Ser Val Thr
      180              185              190

Gly Thr Ser Leu Leu Ser Gly Gly Arg Glu Ser Val Leu Val Glu Trp
      195              200              205

Arg Asp Ala Thr Glu Lys Asn Lys Glu Phe Leu Pro Arg Leu Gly Ala
      210              215              220

Thr Ile Glu His Ile Ser Val Ser Pro Ala Gly Asp Leu Phe Cys Thr
      225              230              235              240

Ser His Ser Asp Asn Lys Ile Ile Ile Ile His Arg Asn Leu Glu Ala
      245              250              255

Ser Ala Val Ile Gln Gly Leu Val Lys Asp Arg Ser Ile Phe Thr Gly
      260              265              270

Leu Met Ile Asp Pro Arg Thr Lys Ala Leu Val Leu Asn Gly Lys Pro
      275              280              285

Gly His Leu Gln Phe Tyr Ser Leu Gln Ser Asp Lys Gln Leu Tyr Asn
      290              295              300

Leu Asp Ile Ile Gln Gln Glu Tyr Ile Asn Asp Tyr Gly Leu Ile Gln
      305              310              315              320

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Ile Glu Leu Thr Lys Ala Ala Phe Gly Cys Phe Gly Asn Trp Leu Ala  
 325 330 335  
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 340 345 350  
 Lys Leu Trp Met Tyr Asn Lys Lys Thr Gln Gly Phe Ile Leu Asn Thr  
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 Lys Ile Asn Met Pro His Glu Asp Cys Ile Thr Ala Leu Cys Phe Cys  
 370 375 380  
 Asn Ala Glu Lys Ser Glu Gln Pro Thr Leu Val Thr Ala Ser Lys Asp  
 385 390 395 400  
 Gly Tyr Phe Lys Val Trp Ile Leu Thr Asp Asp Ser Asp Ile Tyr Lys  
 405 410 415  
 Lys Ala Val Gly Trp Thr Cys Asp Phe Val Gly Ser Tyr His Lys Tyr  
 420 425 430  
 Gln Ala Thr Asn Cys Cys Phe Ser Glu Asp Gly Ser Leu Leu Ala Val  
 435 440 445  
 Ser Phe Glu Glu Ile Val Thr Ile Trp Asp Ser Val Thr Trp Glu Leu  
 450 455 460  
 Lys Cys Thr Phe Cys Gln Arg Ala Gly Lys Ile Arg His Leu Cys Phe  
 465 470 475 480  
 Gly Arg Leu Thr Cys Ser Lys Tyr Leu Leu Gly Ala Thr Glu Asn Gly  
 485 490 495  
 Ile Leu Cys Cys Trp Asn Leu Leu Ser Cys Ala Leu Glu Trp Asn Ala  
 500 505 510  
 Lys Leu Asn Val Arg Val Met Glu Pro Asp Pro Asn Ser Glu Asn Ile  
 515 520 525  
 Ala Ala Ile Ser Gln Ser Ser Val Gly Ser Asp Leu Phe Val Phe Lys  
 530 535 540  
 Pro Ser Glu Pro Arg Pro Leu Tyr Ile Gln Lys Gly Ile Ser Arg Glu  
 545 550 555 560  
 Lys Val Gln Trp Gly Val Phe Val Pro Arg Asp Val Pro Glu Ser Phe  
 565 570 575  
 Thr Ser Glu Ala Tyr Gln Trp Leu Asn Arg Ser Gln Phe Tyr Phe Leu  
 580 585 590  
 Thr Lys Ser Gln Ser Leu Leu Thr Phe Ser Thr Lys Ser Pro Glu Glu  
 595 600 605  
 Lys Leu Thr Pro Thr Ser Lys Gln Leu Leu Ala Glu Glu Ser Leu Pro  
 610 615 620  
 Thr Thr Pro Phe Tyr Phe Ile Leu Gly Lys His Arg Gln Gln Gln Asp  
 625 630 635 640



Glu Lys Leu Asn Glu Thr Leu Glu Asn Glu Leu Val Gln Leu Pro Leu  
                     645                    650                    655  
 Thr Glu Asn Ile Pro Ala Ile Ser Glu Leu Leu His Thr Pro Ala His  
                     660                    665                    670  
 Val Leu Pro Ser Ala Ala Phe Leu Cys Ser Met Phe Val Asn Ser Leu  
                     675                    680                    685  
 Leu Leu Ser Lys Glu Thr Lys Ser Ala Lys Glu Ile Pro Glu Asp Val  
                     690                    695                    700  
 Asp Met Glu Glu Glu Lys Glu Ser Glu Asp Ser Asp Glu Glu Asn Asp  
                     705                    710                    715                    720  
 Phe Thr Glu Lys Val Gln Asp Thr Ser Asn Thr Gly Leu Gly Glu Asp  
                     725                    730                    735  
 Ile Ile His Gln Leu Ser Lys Ser Glu Glu Lys Glu Leu Arg Lys Phe  
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 <212> DNA  
 <213> Homo sapiens

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&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (80)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (93)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (99)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (108)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (112)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (121)

&lt;400&gt; 14

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&lt;210&gt; 15

&lt;211&gt; 539

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 15

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 ccaccagccc agggaatgcc tctaccagtt gtcagcgaga ggcttacaca gcatcttaaa 180  
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 cctttgctaa accaagtgtt gtattgggaa agagacgggg agagaagtgt tggagatgct 360  
 ctttagtcag gcctgagtca cttgccaac cctggagttg gagttgggga tggagccagg 420  
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&lt;210&gt; 16

&lt;211&gt; 27

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 16

Met Asp Cys Glu Leu Lys Met Gly Gly Asp Val Arg Gln Thr Arg Thr  
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Glu Asn Pro Ser Ser Cys Asp Leu Ala Val  
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<210> 17  
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 <213> Homo sapiens

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 <211> 2608  
 <212> DNA  
 <213> Homo sapiens

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2608

&lt;210&gt; 19

&lt;211&gt; 236

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 19

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Met Glu Ser Arg Pro Pro Ala Gln Thr Ser Leu Pro Ala Ser Ser Gly
  1              5              10              15

```

```

Leu Asp Asp Leu Asp Leu Leu Gly Lys Thr Leu Leu Gln Gln Ser Leu
      20              25              30

```

```

Pro Pro Glu Ser Gln Gln Val Arg Trp Glu Lys Gln Gln Pro Thr Pro
    35              40              45

```

```

Arg Leu Thr Leu Arg Asp Leu Gln Asn Lys Ser Ser Ser Cys Ser Ser
    50              55              60

```

```

Pro Ser Ser Ser Ala Thr Ser Leu Leu His Thr Val Ser Pro Glu Pro
    65              70              75              80

```

```

Pro Arg Pro Pro Gln Gln Pro Val Pro Thr Glu Leu Ser Leu Ala Ser
      85              90              95

```

```

Ile Thr Val Pro Leu Glu Ser Ile Lys Pro Ser Asn Ile Leu Pro Val
    100              105              110

```

```

Thr Val Tyr Asp Gln His Gly Phe Arg Ile Leu Phe His Phe Ala Arg
    115              120              125

```

```

Asp Pro Leu Pro Gly Arg Ser Asp Val Leu Val Val Val Val Ser Met
    130              135              140

```

```

Leu Ser Thr Ala Pro Gln Pro Ile Arg Asn Ile Val Phe Gln Ser Ala
    145              150              155              160

```

```

Val Pro Lys Val Met Lys Val Lys Leu Gln Pro Pro Ser Gly Thr Glu
      165              170              175

```

Leu Pro Ala Phe Asn Pro Ile Val His Pro Ser Ala Ile Thr Gln Val  
 180 185 190

Leu Leu Leu Ala Asn Pro Gln Lys Glu Lys Val Arg Leu Arg Tyr Lys  
 195 200 205

Leu Thr Phe Thr Met Gly Asp Gln Thr Tyr Asn Glu Met Gly Asp Val  
 210 215 220

Asp Gln Phe Pro Pro Pro Glu Thr Trp Gly Ser Leu  
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<210> 20

<211> 328

<212> DNA

<213> Homo sapiens

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 agagaatcca aacaatcaca cctccagta ctggaaggac cacaacatcg tgacagcaga 180  
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<210> 21

<211> 87

<212> PRT

<213> Homo sapiens

<400> 21

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 20 25 30

Asn Ile Val Thr Ala Glu Val His Trp Ala Asn Leu Thr Val Ser Glu  
 35 40 45

Cys Gln Glu Met His Gly Glu Phe Met Gly Ser Ala Cys Gly His His  
 50 55 60

Gly Pro Tyr Thr Pro Asp Val Leu Phe Trp Ser Cys Ile Leu Phe Phe  
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Thr Thr Phe Ile Leu Ser Ser  
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<211> 326

<212> DNA

<213> Homo sapiens

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 tttcttcccg taaatatctt ttgatttcca tttgtatgga atcccaatga atgtatcttt 300  
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<210> 24

<211> 396  
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<220>  
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 Leu Tyr Ala Ala Ser Ser Ile Lys Ser Asn Tyr Leu Val Phe Met Ala  
 35 40 45  
 Glu Leu Phe Trp Trp Phe Glu Val Val Lys Pro Ser Phe Val Gln Pro  
 50 55 60  
 Arg Val Val Arg Pro Gln Gly Ala Glu Pro Val Lys Asp Met Pro Ser  
 65 70 75 80  
 Ile Pro Val Leu Asn Ala Ala Lys Arg Asn Val Leu Asp Ser Ser Ser  
 85 90 95  
 Asp Phe Pro Ser Ser Gly Glu Gly Ala Thr Phe Thr Gln Ser His Leu  
 100 105 110  
 Glu

<210> 26  
 <211> 336  
 <212> DNA  
 <213> Homo sapiens

<220>  
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&lt;221&gt; unsure

&lt;222&gt; (123)

&lt;400&gt; 26

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gcgtaaaact gaggaagaac gtcagaagaa agaagatgag agagcacgca gagaatttat 240
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&lt;210&gt; 27

&lt;211&gt; 917

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 27

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tacctaattg agattatggg ttgatggggg cagcaaacca ccatggcaca tgtgtacct 840
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agaaaaaaaa aaaaaa 917

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&lt;210&gt; 28

&lt;211&gt; 76

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 28

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Met Glu Phe Arg Ser Cys Leu Pro Leu Cys Ser Asn Ser Pro Val Thr
  1              5              10              15

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```

Phe Gln Phe Leu His Asp Leu Ala Pro Thr Thr Cys Leu Thr Val Phe
          20              25              30

```

```

Pro Thr Thr Leu Leu Pro Phe Leu Leu Leu Ile Asn Thr Gly Leu Met
      35              40              45

```

```

Val Phe Pro Leu Thr Cys Gln Ala Cys Leu Thr Leu Ser Cys Leu Arg
      50              55              60

```

```

Ala Leu Leu Phe Pro Leu Pro Gly Thr Phe Phe Pro
      65              70              75

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&lt;210&gt; 29

&lt;211&gt; 351



&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 29

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acagaagatg acaccaagtt gaatccctat gcaggaggag acggccttca gaacaacctg 240
tcccccaaga caaagggcac tcctgtgcac ctgggcacca tcgtgggcat cgtgctggca 300
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&lt;210&gt; 30

&lt;211&gt; 108

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (40)

&lt;400&gt; 30

```

Met Asp Tyr Gly Cys Ala Gln Glu Ala Gly Arg Met Cys Glu Asp
 1             5             10             15
Phe Gln Asp Glu Asp His Asp Ser Ala Ser Pro Asp Thr Ser Phe Ser
      20             25             30
Pro Tyr Asp Gly Asp Leu Thr Xaa Thr Ser Ser Ser Leu Phe Ile Asp
      35             40             45
Ser Leu Thr Thr Glu Asp Asp Thr Lys Leu Asn Pro Tyr Ala Gly Gly
      50             55             60
Asp Gly Leu Gln Asn Asn Leu Ser Pro Lys Thr Lys Gly Thr Pro Val
      65             70             75             80
His Leu Gly Thr Ile Val Gly Ile Val Leu Ala Val Leu Leu Val Ala
      85             90             95
Ala Ile Ile Leu Ala Gly Ile Tyr Ile Asn Gly His
      100             105

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&lt;210&gt; 31

&lt;211&gt; 179

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (24)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (33)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (56)

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<210> 32  
 <211> 3906  
 <212> DNA  
 <213> Homo sapiens

<400> 32  
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 <212> PRT  
 <213> Homo sapiens

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 Glu Asn Ile Phe Arg Glu Gly Gln Tyr Leu Gly Cys Ser Phe Asp Leu  
 35 40 45  
 Thr Lys Val Lys Asp Ser Ser Phe Glu Gln His Ser Val Gln Ile Met  
 50 55 60  
 Val Lys Asp Asn Ala Gly Lys Ile Lys Pro Ser Phe Asn Ile Val Pro  
 65 70 75 80  
 Leu Thr Ser Arg Val Lys Pro Asp Pro Pro His Ile Lys Asn Leu Ser

|   |                                 |     |
|---|---------------------------------|-----|
| 85  | 90                              | 95  |
| Phe His Asn Asp Asp Leu Tyr Val                                 | Gln Trp Glu Asn Pro Gln Asn Phe |     |
| 100   | 105                             | 110 |
| Ile Ser Arg Cys Leu Phe Tyr Glu Val Glu Val Asn Asn Ser Gln Thr |                                 |     |
| 115   | 120                             | 125 |
| Glu Thr His Asn Val Phe Tyr Val Gln Glu Ala Lys Cys Glu Asn Pro |                                 |     |
| 130   | 135                             | 140 |
| Glu Phe Glu Arg Asn Val Glu Asn Thr Ser Cys Phe Met Val Pro Gly |                                 |     |
| 145   | 150                             | 155 |
| Val Leu Pro Asp Thr Leu Asn Thr Val Arg Ile Arg Val Lys Thr Asn |                                 |     |
| 165   | 170                             | 175 |
| Lys Leu Cys Tyr Glu Asp Asp Lys Leu Trp Ser Asn Trp Ser Gln Glu |                                 |     |
| 180   | 185                             | 190 |
| Met Ser Ile Gly Lys Lys Arg Asn Ser Thr Leu Tyr Ile Thr Met Leu |                                 |     |
| 195   | 200                             | 205 |
| Leu Ile Val Pro Val Ile Val Ala Gly Ala Ile Ile Val Leu Leu Leu |                                 |     |
| 210   | 215                             | 220 |
| Tyr Leu Lys Arg Leu Lys Ile Ile Ile Phe Pro Pro Ile Pro Asp Pro |                                 |     |
| 225   | 230                             | 235 |
| Gly Lys Ile Phe Lys Glu Met Phe Gly Asp Gln Asn Asp Asp Thr Leu |                                 |     |
| 245   | 250                             | 255 |
| His Trp Lys Lys Tyr Asp Ile Tyr Glu Lys Gln Thr Lys Glu Glu Thr |                                 |     |
| 260   | 265                             | 270 |
| Asp Ser Val Val Leu Ile Glu Asn Leu Lys Lys Ala Ser Gln         |                                 |     |
| 275   | 280                             | 285 |

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 <212> DNA  
 <213> Homo sapiens

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<210> 35

<211> 241

<212> PRT

<213> Homo sapiens

<400> 35

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 20 25 30

Ser Ile Asp Gly Ala Ser Phe Leu Lys Ile Phe Gly Pro Leu Ser Ser  
 35 40 45

Ser Ala Met Gln Phe Val Asn Val Gly Tyr Phe Leu Ile Ala Ala Gly  
 50 55 60

Val Val Val Phe Ala Leu Gly Phe Leu Gly Cys Tyr Gly Ala Lys Thr  
 65 70 75 80

Glu Ser Lys Cys Ala Leu Val Thr Phe Phe Phe Ile Leu Leu Leu Ile  
 85 90 95

Phe Ile Ala Glu Val Ala Ala Ala Val Val Ala Leu Val Tyr Thr Thr  
 100 105 110

Met Ala Glu His Phe Leu Thr Leu Leu Val Val Pro Ala Ile Lys Lys  
 115 120 125

Asp Tyr Gly Ser Gln Glu Asp Phe Thr Gln Val Trp Asn Thr Thr Met  
 130 135 140

Lys Gly Leu Lys Cys Cys Gly Phe Thr Asn Tyr Thr Asp Phe Glu Asp  
 145 150 155 160

Ser Pro Tyr Phe Lys Glu Asn Ser Ala Phe Pro Pro Phe Cys Cys Asn  
 165 170 175

Asp Asn Val Thr Asn Thr Ala Asn Glu Thr Cys Thr Lys Gln Lys Ala  
 180 185 190

His Asp Gln Lys Val Glu Gly Cys Phe Asn Gln Leu Leu Tyr Asp Ile  
 195 200 205

Arg Thr Asn Ala Val Thr Val Gly Gly Val Ala Ala Gly Ile Gly Gly  
 210 215 220

Leu Glu Leu Ala Ala Met Ile Val Ser Met Tyr Leu Tyr Cys Asn Leu  
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Gln

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 <212> DNA  
 <213> Homo sapiens

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 <222> (346)

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<210> 37  
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 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> UNSURE  
 <222> (96)

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 20 25 30  
 Arg Leu Leu Ser Thr Ser Pro Ala Leu Gln Gly Thr Pro Ala Ser Arg  
 35 40 45  
 Gly Phe Phe Ala Ala Ala Ile Leu Phe Leu Ser Gln Ser His Val Ala  
 50 55 60  
 Arg Ala Thr Pro Gly Ser Asp Gln Ala Val Leu Ala Leu Ser Pro Glu  
 65 70 75 80  
 Tyr Glu Gly Ile Trp Ala Asp Leu Gln Glu Leu Trp Phe Leu Gly Xaa  
 85 90 95  
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<210> 38  
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<212> DNA  
 <213> Homo sapiens

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<210> 39  
 <211> 2384  
 <212> DNA  
 <213> Homo sapiens

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gcatttttagg agtagataca tcttttaaaa taaaacagag aggatgcata gaaggctgat 2160
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tttttttttt cttttgggga aaggggaagga aaaattataa tctaataatc tggttctttt 2280
taaattgttt gtaacttgga tgctgccgct actgaatggt tacaaattgc ttgcctgcta 2340
aagtaaatga ttaaatgtac attttcttac tataaaaaaa aaaa 2384

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&lt;210&gt; 40

&lt;211&gt; 614

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (607)

&lt;400&gt; 40

```

Met Ile Asn Lys Thr Gly Phe Lys Phe Ser Ala Glu Lys Pro Val Ile
  1             5             10             15

```

```

Glu Val Pro Ser Met Thr Ile Leu Asp Lys Lys Asp Gly Glu Gln Ala
      20             25             30

```

```

Lys Ala Leu Phe Glu Lys Val Arg Lys Phe Arg Ala His Val Glu Asp
      35             40             45

```

```

Ser Asp Leu Ile Tyr Lys Leu Tyr Val Val Gln Thr Val Ile Lys Thr
      50             55             60

```

```

Ala Lys Phe Ile Phe Ile Leu Cys Tyr Thr Ala Asn Phe Val Asn Ala
      65             70             75             80

```

```

Ile Ser Phe Glu His Val Cys Lys Pro Lys Val Glu His Leu Ile Gly
      85             90             95

```

```

Tyr Glu Val Phe Glu Cys Thr His Asn Met Ala Tyr Met Leu Lys Lys
      100            105            110

```



Leu Leu Ile Ser Tyr Ile Ser Ile Ile Cys Val Tyr Gly Phe Ile Cys  
 115 120 125

Leu Tyr Thr Leu Phe Trp Leu Phe Arg Ile Pro Leu Lys Glu Tyr Ser  
 130 135 140

Phe Glu Lys Val Arg Glu Glu Ser Ser Phe Ser Asp Ile Pro Asp Val  
 145 150 155 160

Lys Asn Asp Phe Ala Phe Leu Leu His Met Val Asp Gln Tyr Asp Gln  
 165 170 175

Leu Tyr Ser Lys Arg Phe Gly Val Phe Leu Ser Glu Val Ser Glu Asn  
 180 185 190

Lys Leu Arg Glu Ile Ser Leu Asn His Glu Trp Thr Phe Glu Lys Leu  
 195 200 205

Arg Gln His Ile Ser Arg Asn Ala Gln Asp Lys Gln Glu Leu His Leu  
 210 215 220

Phe Met Leu Ser Gly Val Pro Asp Ala Val Phe Asp Leu Thr Asp Leu  
 225 230 235 240

Asp Val Leu Lys Leu Glu Leu Ile Pro Glu Ala Lys Ile Pro Ala Lys  
 245 250 255

Ile Ser Gln Met Thr Asn Leu Gln Glu Leu His Leu Cys His Cys Pro  
 260 265 270

Ala Lys Val Glu Gln Thr Ala Phe Ser Phe Leu Arg Asp His Leu Arg  
 275 280 285

Cys Leu His Val Lys Phe Thr Asp Val Ala Glu Ile Pro Ala Trp Val  
 290 295 300

Tyr Leu Leu Lys Asn Leu Arg Glu Leu Tyr Leu Ile Gly Asn Leu Asn  
 305 310 315 320

Ser Glu Asn Asn Lys Met Ile Gly Leu Glu Ser Leu Arg Glu Leu Arg  
 325 330 335

His Leu Lys Ile Leu His Val Lys Ser Asn Leu Thr Lys Val Pro Ser  
 340 345 350

Asn Ile Thr Asp Val Ala Pro His Leu Thr Lys Leu Val Ile His Asn  
 355 360 365

Asp Gly Thr Lys Leu Leu Val Leu Asn Ser Leu Lys Lys Met Met Asn  
 370 375 380

Val Ala Glu Leu Glu Leu Gln Asn Cys Glu Leu Glu Arg Ile Pro His  
 385 390 395 400

Ala Ile Phe Ser Leu Ser Asn Leu Gln Glu Leu Asp Leu Lys Ser Asn  
 405 410 415

Asn Ile Arg Thr Ile Glu Glu Ile Ile Ser Phe Gln His Leu Lys Arg  
 420 425 430

Leu Thr Cys Leu Lys Leu Trp His Asn Lys Ile Val Thr Ile Pro Pro  
 435 440 445  
 Ser Ile Thr His Val Lys Asn Leu Glu Ser Leu Tyr Phe Ser Asn Asn  
 450 455 460  
 Lys Leu Glu Ser Leu Pro Val Ala Val Phe Ser Leu Gln Lys Leu Arg  
 465 470 475 480  
 Cys Leu Asp Val Ser Tyr Asn Asn Ile Ser Met Ile Pro Ile Glu Ile  
 485 490 495  
 Gly Leu Leu Gln Asn Leu Gln His Leu His Ile Thr Gly Asn Lys Val  
 500 505 510  
 Asp Ile Leu Pro Lys Gln Leu Phe Lys Cys Ile Lys Leu Arg Thr Leu  
 515 520 525  
 Asn Leu Gly Gln Asn Cys Ile Thr Ser Leu Pro Glu Lys Val Gly Gln  
 530 535 540  
 Leu Ser Gln Leu Thr Gln Leu Glu Leu Lys Gly Asn Cys Leu Asp Arg  
 545 550 555 560  
 Leu Pro Ala Gln Leu Gly Gln Cys Arg Met Leu Lys Lys Ser Gly Leu  
 565 570 575  
 Val Val Glu Asp His Leu Phe Asp Thr Leu Pro Leu Glu Val Lys Glu  
 580 585 590  
 Ala Leu Asn Gln Asp Ile Asn Ile Pro Phe Ala Asn Gly Ile Xaa Thr  
 595 600 605  
 Lys Ile Ile Tyr Ala Gln  
 610

<210> 41  
 <211> 2386  
 <212> DNA  
 <213> Homo sapiens

<400> 41  
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 cagatttagt acaggaagca tgtgaaagt aattgaatga agttactggt acaaagattg 180  
 cttatgaaac aaaaatggac ttggttcaaa catcagaagt tatgcaagag tcaactctatc 240  
 ctgcagcaca gctttgcccc tcatttgaag agtcagaagc tactccttca ccagttttgc 300  
 ctgacattgt tatggaagca ccattgaatt ctgcagttcc tagtgctggt gcttccgtga 360  
 tacagcccag ctcatcacca ttagaagctt cttcagttaa ttatgaaagc ataaaacatg 420  
 agcctgaaaa cccccacca tatgaagagg ccatgagtgt atcactaaaa aaagtatcag 480  
 gaataaagga agaaattaaa gagcctgaaa atattaatgc agctcttcaa gaaacagaag 540  
 ctcccttatat atctatttga tgtgatttaa ttaaagaaac aaagctttct gctgaaccag 600  
 ctccggattt ctctgattat tcagaaatgg caaaagttga acagccagtg cctgatcatt 660  
 ctgagctagt tgaagattcc tcacctgatt ctgaaccagt tgacttattt agtgatgatt 720  
 caatacctga cgttccacaa aaacaagatg aaactgtgat gcttgtgaaa gaaagtctca 780  
 ctgagacttc atttgagtca atgatagaat atgaaaataa ggaaaaactc agtgctttgc 840  
 cacctgaggg aggaagacca ttttggaat cttttaagct cagtttagat aacacaaaag 900  
 atacctgttt acctgatgaa gtttcaaat tgagcaaaaa ggagaaaatt cctttgcaga 960  
 tggaggagct cagtactgca gtttattcaa atgatgactt atttatttct aaggaagcac 1020

```

agataagaga aactgaaacg ttttcagatt catctccaat tgaaattata gatgagttcc 1080
ctacattgat cagttctaaa actgattcat tttctaaatt agccagggaa tatactgacc 1140
tagaagtatc ccacaaaagt gaaattgcta atgccccgga tggagctggg tcattgcctt 1200
gcacagaatt gccccatgac ctttctttga agaacatata acccaaagtt gaagagaaaa 1260
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ctccagatgt ttctgctttg gccactcaag cagagataga gagcatagtt aaacccaaag 1380
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catctgctat attttcagca gagctgagta aaacttcagt tgttgacctc ctgtactgga 1500
gagacattaa gaagactgga gtggtgtttg gtgccagcct attcctgctg ctttcattga 1560
cagtattcag cattgtgagc gtaacagcct acattgcctt ggcctgctc tctgtgacca 1620
tcagcttttag gatatacaag ggtgtgatcc aagctatcca gaaatcagat gaaggccacc 1680
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aggcactggt ggaataaaaa acctgtatat tttactttgt tgcagatagt cttgccgcat 2340
cttggaagat tgcagagatg gtggagctag aaaaaaaaaa aaaaaa 2386

```

&lt;210&gt; 42

&lt;211&gt; 642

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 42

```

Met Pro Glu Gly Leu Thr Pro Asp Leu Val Gln Glu Ala Cys Glu Ser
  1              5              10              15

```

```

Glu Leu Asn Glu Val Thr Gly Thr Lys Ile Ala Tyr Glu Thr Lys Met
      20              25              30

```

```

Asp Leu Val Gln Thr Ser Glu Val Met Gln Glu Ser Leu Tyr Pro Ala
    35              40              45

```

```

Ala Gln Leu Cys Pro Ser Phe Glu Glu Ser Glu Ala Thr Pro Ser Pro
    50              55              60

```

```

Val Leu Pro Asp Ile Val Met Glu Ala Pro Leu Asn Ser Ala Val Pro
    65              70              75              80

```

```

Ser Ala Gly Ala Ser Val Ile Gln Pro Ser Ser Ser Pro Leu Glu Ala
      85              90              95

```

```

Ser Ser Val Asn Tyr Glu Ser Ile Lys His Glu Pro Glu Asn Pro Pro
    100              105              110

```

```

Pro Tyr Glu Glu Ala Met Ser Val Ser Leu Lys Lys Val Ser Gly Ile
    115              120              125

```

```

Lys Glu Glu Ile Lys Glu Pro Glu Asn Ile Asn Ala Ala Leu Gln Glu
    130              135              140

```

```

Thr Glu Ala Pro Tyr Ile Ser Ile Ala Cys Asp Leu Ile Lys Glu Thr
    145              150              155              160

```

Lys Leu Ser Ala Glu Pro Ala Pro Asp Phe Ser Asp Tyr Ser Glu Met  
 165 170 175  
 Ala Lys Val Glu Gln Pro Val Pro Asp His Ser Glu Leu Val Glu Asp  
 180 185 190  
 Ser Ser Pro Asp Ser Glu Pro Val Asp Leu Phe Ser Asp Asp Ser Ile  
 195 200 205  
 Pro Asp Val Pro Gln Lys Gln Asp Glu Thr Val Met Leu Val Lys Glu  
 210 215 220  
 Ser Leu Thr Glu Thr Ser Phe Glu Ser Met Ile Glu Tyr Glu Asn Lys  
 225 230 235 240  
 Glu Lys Leu Ser Ala Leu Pro Pro Glu Gly Gly Lys Pro Tyr Leu Glu  
 245 250 255  
 Ser Phe Lys Leu Ser Leu Asp Asn Thr Lys Asp Thr Leu Leu Pro Asp  
 260 265 270  
 Glu Val Ser Thr Leu Ser Lys Lys Glu Lys Ile Pro Leu Gln Met Glu  
 275 280 285  
 Glu Leu Ser Thr Ala Val Tyr Ser Asn Asp Asp Leu Phe Ile Ser Lys  
 290 295 300  
 Glu Ala Gln Ile Arg Glu Thr Glu Thr Phe Ser Asp Ser Ser Pro Ile  
 305 310 315 320  
 Glu Ile Ile Asp Glu Phe Pro Thr Leu Ile Ser Ser Lys Thr Asp Ser  
 325 330 335  
 Phe Ser Lys Leu Ala Arg Glu Tyr Thr Asp Leu Glu Val Ser His Lys  
 340 345 350  
 Ser Glu Ile Ala Asn Ala Pro Asp Gly Ala Gly Ser Leu Pro Cys Thr  
 355 360 365  
 Glu Leu Pro His Asp Leu Ser Leu Lys Asn Ile Gln Pro Lys Val Glu  
 370 375 380  
 Glu Lys Ile Ser Phe Ser Asp Asp Phe Ser Lys Asn Gly Ser Ala Thr  
 385 390 395 400  
 Ser Lys Val Leu Leu Leu Pro Pro Asp Val Ser Ala Leu Ala Thr Gln  
 405 410 415  
 Ala Glu Ile Glu Ser Ile Val Lys Pro Lys Val Leu Val Lys Glu Ala  
 420 425 430  
 Glu Lys Lys Leu Pro Ser Asp Thr Glu Lys Glu Asp Arg Ser Pro Ser  
 435 440 445  
 Ala Ile Phe Ser Ala Glu Leu Ser Lys Thr Ser Val Val Asp Leu Leu  
 450 455 460  
 Tyr Trp Arg Asp Ile Lys Lys Thr Gly Val Val Phe Gly Ala Ser Leu  
 465 470 475 480

Phe Leu Leu Leu Ser Leu Thr Val Phe Ser Ile Val Ser Val Thr Ala  
 485 490 495  
 Tyr Ile Ala Leu Ala Leu Leu Ser Val Thr Ile Ser Phe Arg Ile Tyr  
 500 505 510  
 Lys Gly Val Ile Gln Ala Ile Gln Lys Ser Asp Glu Gly His Pro Phe  
 515 520 525  
 Arg Glu Val Ala Ile Ser Glu Glu Leu Val Gln Lys Tyr Ser Asn Ser  
 530 535 540  
 Ala Leu Gly His Val Asn Cys Thr Ile Lys Glu Leu Arg Arg Leu Phe  
 545 550 555 560  
 Leu Val Asp Asp Leu Val Asp Ser Leu Lys Phe Ala Val Leu Met Trp  
 565 570 575  
 Val Phe Thr Tyr Val Gly Ala Leu Phe Asn Gly Leu Thr Leu Leu Ile  
 580 585 590  
 Leu Ala Leu Ile Ser Leu Phe Ser Val Pro Val Ile Tyr Glu Arg His  
 595 600 605  
 Gln Ala Gln Ile Asp His Tyr Leu Gly Leu Ala Asn Lys Asn Val Lys  
 610 615 620  
 Asp Ala Met Ala Lys Ile Gln Ala Lys Ile Pro Gly Leu Lys Arg Lys  
 625 630 635 640  
 Ala Glu

<210> 43  
 <211> 344  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (13)

<220>  
 <221> unsure  
 <222> (39)

<220>  
 <221> unsure  
 <222> (185)

<220>  
 <221> unsure  
 <222> (260)

<400> 43  
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 gccgtcgggc acagtcccg tgcctctctg tttctcagtc ttcgcgcgac cctcgtcggg 120  
 gccacacggg gcggggtaca agctgctcat ccagaagttc ctcagcctgt acggcgacca 180  
 gatcnacatg caccgcaa at tcgtggtgca gctgttcgcc gaggagtggg gccagtacgt 240

ggacttgccc aagggcttcn cggtgagcga gcgctgcaag gtgcgcctcg tgccgctgca 300  
tatccagctc actaccctgg gaaatcttac acctcaagc actg 344

<210> 44  
<211> 631  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> (73)

<220>  
<221> unsure  
<222> (369)

<400> 44  
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aaagtaaaag cantacatcc acattaacat tataacatct tacagtaata taaaagccaa 120  
atcattgttg gtacgtcatt ttctttaaag tgaacaattt aagaaaactt cacaagagtc 180  
tgcacttttg aaagatacga tcagagtaca cagtagagac aaaacaggca tcttcattgt 240  
aatttttttt aataaataaa agcacattaa caaaaaagga aggtaagcag caccggaagc 300  
ctttgacgtt tgtaactaaa tgctgggtact caattgaatc gagctgggta agtttccacta 360  
ggaggcgcn aaaaaggagcc gtttttgact taacatttta attctagtag agataagaag 420  
agcttggttg ggcttacagt ccttcacctg actgtccttc accagttagt agcataccag 480  
ttcttcaaat gtcctatact ttggaaagca gaccgcactc tggagcactc gccttaatta 540  
gattctgaat ttccttgaat tttggatggt ccttatcagc taccagctga agcagaacag 600  
cctcactcgt ggtcactatg atcccgggtc g 631

<210> 45  
<211> 22  
<212> PRT  
<213> Homo sapiens

<400> 45  
Met Val Leu Ile Ser Tyr Gln Leu Lys Gln Asn Ser Leu Thr Arg Gly  
1 5 10 15

His Tyr Asp Pro Gly Ser  
20

<210> 46  
<211> 70  
<212> DNA  
<213> Homo sapiens

<400> 46  
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 60  
aaaaaaaaaa 70

<210> 47  
<211> 428  
<212> DNA  
<213> Homo sapiens

<400> 47  
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tcaacatgcg ctacctgggc aaggtgctgg agctggtgct gcggarcccc gcccgccacc 120  
agctggacca cgtcttttaa atcggcattg gagaactcat caccgctcg sccaagcaca 180

tcttcaagac gtacttacag ggagtcgagc tctccggcct ctcagccgcc atcagccact 240  
 tcctgaactg cttcctgagc tcctacccaa acccctgggc ccacctgccc gccgacgagc 300  
 tgggtctccaa gaagcggaat aagaggagga aaaaccggcc cccgggggct gcagataaca 360  
 cagcctgggc tgtcatgacc cccagggagc tctggaagaa catctgccag gaggccaaga 420  
 actacttt 428

<210> 48

<211> 128

<212> PRT

<213> Homo sapiens

<220>

<221> UNSURE

<222> (21)

<220>

<221> UNSURE

<222> (43)

<400> 48

Met Arg Gln Arg Gly Ile Asn Met Arg Tyr Leu Gly Lys Val Leu Glu  
 1 5 10 15

Leu Val Leu Arg Xaa Pro Ala Arg His Gln Leu Asp His Val Phe Lys  
 20 25 30

Ile Gly Ile Gly Glu Leu Ile Thr Arg Ser Xaa Lys His Ile Phe Lys  
 35 40 45

Thr Tyr Leu Gln Gly Val Glu Leu Ser Gly Leu Ser Ala Ala Ile Ser  
 50 55 60

His Phe Leu Asn Cys Phe Leu Ser Ser Tyr Pro Asn Pro Val Ala His  
 65 70 75 80

Leu Pro Ala Asp Glu Leu Val Ser Lys Lys Arg Asn Lys Arg Arg Lys  
 85 90 95

Asn Arg Pro Pro Gly Ala Ala Asp Asn Thr Ala Trp Ala Val Met Thr  
 100 105 110

Pro Gln Glu Leu Trp Lys Asn Ile Cys Gln Glu Ala Lys Asn Tyr Phe  
 115 120 125

<210> 49

<211> 245

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (46)

<220>

<221> unsure

<222> (138)

<220>

<221> unsure

&lt;222&gt; (147)

&lt;400&gt; 49

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 cggagagccg cttatgggtg tggtcggtcc agacaccttg tttcaagggg gatgggcgtg 120  
 agcgggcaag cagagcanc caccgntga gcaagaactt ttttttgttt ttaaaccatc 180  
 acgtcctcat ttcacattgg aataaagtga gtttttgaaa aaaaaaaaaa aaaaaaaaaa 240  
 aaaaaa 245

&lt;210&gt; 50

&lt;211&gt; 566

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 50

cagtgaagccc tttgaaaaat aaacatccag atgaagatgc tgtggaagct gaggggcatg 60  
 aggtaaaaag actcagggtt gacaaagaag gtgaagtcag agaaacagcc agtcaaacga 120  
 cttccagcga aatttcttca gttatggtag gagaaacaga agcatcatct tcatctcagg 180  
 ataaagacaa agatagccgt tgtwcccggc agcactgtwc agaagaggat gaagaagagg 240  
 atgaagagga agaagaagag tcttttatga catcaagaga aatgatccca gaaagaaaaa 300  
 atcaagaaaa agaactctgat gatgccttaa ctgtgaaatga agagacttct gaggaaaata 360  
 atcaaattgga ggaatctgat gtgtctcaag ctgagaaaga tttgctacat tctgaaggta 420  
 gtgaaaacga aggccctgta agtagtagtt cttctgactg ccgtgaaaca gaagaattag 480  
 taggatccaa ttccagtaaa actggagaga ttctttcaga atcatccatg gaaaatgatg 540  
 acgaagccac agaagtcacc gatgaa 566

&lt;210&gt; 51

&lt;211&gt; 141

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (21)

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (26)

&lt;400&gt; 51

Met Val Gly Glu Thr Glu Ala Ser Ser Ser Ser Gln Asp Lys Asp Lys  
 1 5 10 15  
 Asp Ser Arg Cys Xaa Arg Gln His Cys Xaa Glu Glu Asp Glu Glu Glu  
 20 25 30  
 Asp Glu Glu Glu Glu Glu Ser Phe Met Thr Ser Arg Glu Met Ile  
 35 40 45  
 Pro Glu Arg Lys Asn Gln Glu Lys Glu Ser Asp Asp Ala Leu Thr Val  
 50 55 60  
 Asn Glu Glu Thr Ser Glu Glu Asn Asn Gln Met Glu Glu Ser Asp Val  
 65 70 75 80  
 Ser Gln Ala Glu Lys Asp Leu Leu His Ser Glu Gly Ser Glu Asn Glu  
 85 90 95  
 Gly Pro Val Ser Ser Ser Ser Asp Cys Arg Glu Thr Glu Glu Leu  
 100 105 110



Val Gly Ser Asn Ser Ser Lys Thr Gly Glu Ile Leu Ser Glu Ser Ser  
 115 120 125

Met Glu Asn Asp Asp Glu Ala Thr Glu Val Thr Asp Glu  
 130 135 140

<210> 52

<211> 531

<212> DNA

<213> Homo sapiens

<400> 52

tcacatcatggc tataaatacc aaaacgattt ggatccattt atgtttgtag gataatatac 60  
 tactgactga cttgactgtc aggttcacaa cagctagatg atatatattat gactatgtct 120  
 aatagtgtgaa ataaaatctg aatattgatt tactataccc aagaggggag aaaaattaac 180  
 cattgtaaat ttttaaaaat tttttcaaaa atgttataat gaggcaaatt taagtattaca 240  
 aattttgaaa ttttcttttg aatatttatg aaattgtcag taaacttacc taagatcctg 300  
 tgaccttttg atatttttta ttttaattgt agtgccatgg accatttgta aacaaattga 360  
 ttacttttg ttggtgttaa gttgaagatt tagcattatg actttgaggt ctgtgggttt 420  
 atttgtaaac ttgcaattgc tatatttgca agggcaaatg tatttcttta ttaaataaag 480  
 tacaataatg gtgaatgtac caaatgaca tcacttaaaa aaaaaaaaaa a 531

<210> 53

<211> 1163

<212> DNA

<213> Homo sapiens

<400> 53

kctggaacca cgcggargaa ggaagagacg caggcaggct gcggttacc aagcggscac 60  
 ccgggcctca gggacccttc cccgagagac ggcacatga cccagggaaa gctctccgtg 120  
 gctaacaagc ccctgggacc gaggggcagc agcakgtgca tggcgagaag aaggagctcc 180  
 agcagtgtcc tcagccccac cctcctatga ggaaccacct ctggggaggg gatgaaggca 240  
 ggggccttc cccagcccc cacagcgggtg cctctccacc ctagctgggc ctatgtggac 300  
 cccagcagca gctccagcta tgacaacggt tccccaccg gagaccatga gctcttcacc 360  
 actttcagct gggatgacca gaaagtctgt cgagtctctg tcagaaagggt ctacaccatc 420  
 ctgctgattc agctgctggt gaccttggtg gtcgtggctc tctttacttt ctgtgacctt 480  
 gtcaaggact atgtccagga caaccaggc tggtagtggg catcctatgc tgtgttcttt 540  
 gcaacctacc tgacctggc ttgctgttct ggacctcagg ggcatttccc ctggaacctg 600  
 attctcctga ccgtctttac cctgtccatg gcctacctca ctgggatgct gtccagctac 660  
 tacaacacca cctcctgtgt gctgtgcctg ggcatacagg ccttgtctg cctctcagtc 720  
 accgtcttca gcttccagac caagtctgac ttcacctcct gccagggcgt gctcttcgtg 780  
 cttctcatga ctcttttctt cagcggactc atcctggcca tcctcctacc cttccaatat 840  
 gtgccctggc tccatgcagt ttatgcagca ctgggagcgg gtgtatttac attgttcctg 900  
 gcacttgaca cccagttgct gatgggtaac cgacgccact cgctgagccc tgaggagtat 960  
 atttttggag ccctcaacat ttacctagac atcatctata tcttcacctt cttcctgcag 1020  
 ctttttggca ctaaccgaga atgaggagcc ctccctgccc caccgtctc cagagaatgc 1080  
 gccctcctg gttccctgtc cctccctgct gctcctgcga gaccagatat aaaactagct 1140  
 gccaaaccaa aaaaaaaaaa aaa 1163

<210> 54

<211> 270

<212> PRT

<213> Homo sapiens

<400> 54

Met Lys Ala Gly Ala Phe Pro Pro Ala Pro Thr Ala Val Pro Leu His  
 1 5 10 15

Pro Ser Trp Ala Tyr Val Asp Pro Ser Ser Ser Ser Ser Tyr Asp Asn  
 20 25 30  
 Gly Phe Pro Thr Gly Asp His Glu Leu Phe Thr Thr Phe Ser Trp Asp  
 35 40 45  
 Asp Gln Lys Val Arg Arg Val Phe Val Arg Lys Val Tyr Thr Ile Leu  
 50 55 60  
 Leu Ile Gln Leu Leu Val Thr Leu Ala Val Val Ala Leu Phe Thr Phe  
 65 70 75 80  
 Cys Asp Pro Val Lys Asp Tyr Val Gln Ala Asn Pro Gly Trp Tyr Trp  
 85 90 95  
 Ala Ser Tyr Ala Val Phe Phe Ala Thr Tyr Leu Thr Leu Ala Cys Cys  
 100 105 110  
 Ser Gly Pro Arg Arg His Phe Pro Trp Asn Leu Ile Leu Leu Thr Val  
 115 120 125  
 Phe Thr Leu Ser Met Ala Tyr Leu Thr Gly Met Leu Ser Ser Tyr Tyr  
 130 135 140  
 Asn Thr Thr Ser Val Leu Leu Cys Leu Gly Ile Thr Ala Leu Val Cys  
 145 150 155 160  
 Leu Ser Val Thr Val Phe Ser Phe Gln Thr Lys Phe Asp Phe Thr Ser  
 165 170 175  
 Cys Gln Gly Val Leu Phe Val Leu Leu Met Thr Leu Phe Phe Ser Gly  
 180 185 190  
 Leu Ile Leu Ala Ile Leu Leu Pro Phe Gln Tyr Val Pro Trp Leu His  
 195 200 205  
 Ala Val Tyr Ala Ala Leu Gly Ala Gly Val Phe Thr Leu Phe Leu Ala  
 210 215 220  
 Leu Asp Thr Gln Leu Leu Met Gly Asn Arg Arg His Ser Leu Ser Pro  
 225 230 235 240  
 Glu Glu Tyr Ile Phe Gly Ala Leu Asn Ile Tyr Leu Asp Ile Ile Tyr  
 245 250 255  
 Ile Phe Thr Phe Phe Leu Gln Leu Phe Gly Thr Asn Arg Glu  
 260 265 270

<210> 55  
 <211> 624  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (123)

<400> 55  
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 canccgggag ggcgacgtgg agcggccack tggakcggcc cgggggargc tggcgggcgg 180  
 akgcgaggcg cggggcggcg akcakccakg agcggccacg gagstggacc cccagakccg 240  
 cgggcgcccg cagcagttcc aggaaggatg ttacctttga cgatgacagt gttaatcctg 300  
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 caggttctcc tctacctctt tgccctccat gactatgacc agagtggaca gctggatggc 540  
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<210> 56

<211> 119

<212> PRT

<213> Homo sapiens

<400> 56

Met Leu Pro Leu Thr Met Thr Val Leu Ile Leu Leu Leu Leu Pro Thr  
 1 5 10 15

Gly Gln Ala Ala Pro Lys Asp Gly Val Thr Arg Pro Glu Ser Glu Val  
 20 25 30

Gln His Gln Leu Leu Pro Asn Pro Phe Gln Pro Gly Gln Glu Gln Leu  
 35 40 45

Gly Leu Leu Gln Ser Tyr Leu Lys Gly Leu Gly Arg Thr Glu Val Gln  
 50 55 60

Leu Glu His Leu Ser Arg Glu Gln Val Leu Leu Tyr Leu Phe Ala Leu  
 65 70 75 80

His Asp Tyr Asp Gln Ser Gly Gln Leu Asp Gly Leu Glu Leu Leu Ser  
 85 90 95

Met Leu Thr Ala Ala Leu Ala Pro Gly Ala Ala Asn Ser Pro Thr Thr  
 100 105 110

Asn Pro Val Ile Leu Ile Val  
 115

<210> 57

<211> 80

<212> DNA

<213> Homo sapiens

<400> 57

aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 60  
 aaaaaaaaaa aaaaaaaaaa 80

<210> 58

<211> 2160

<212> DNA

<213> Homo sapiens

<400> 58

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 agcatcctatg ttttagagca taggtcagta attgtatatg agagcatata ctgctacata 120  
 caaattaact gatcagacca caacttttca atgtttaaaa cagaataagc ttccctgtaa 180

```

aagcagcacc tttgtgacgt ttttaacttta gtattctctct ccttcttctc caccctctcc 240
ttcaacagaa tccacaccaa cctcctcata atccttctct gcagcacatg aatcacaggt 300
attcctactg caagcgggag gcgaggagc ggggaagcggc ggagcgcgag gcgcgcgaga 360
aagggcactt ggaaccaccc gagctgctga tgaaccgggc ttacttgacg agcattaccc 420
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```

&lt;210&gt; 59

&lt;211&gt; 141

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 59

```

Met Asn His Arg Tyr Ser Tyr Cys Lys Arg Glu Ala Glu Glu Arg Glu
  1                      5                      10                      15

```

```

Ala Ala Glu Arg Glu Ala Arg Glu Lys Gly His Leu Glu Pro Thr Glu
      20                      25                      30

```

```

Leu Leu Met Asn Arg Ala Tyr Leu Gln Ser Ile Thr Pro Gln Gly Tyr
    35                      40                      45

```

```

Ser Asp Ser Glu Glu Arg Glu Ser Met Pro Arg Asp Gly Glu Ser Glu
    50                      55                      60

```

```

Lys Glu His Glu Lys Glu Gly Glu Asp Gly Tyr Gly Lys Leu Gly Arg
    65                      70                      75                      80

```

```

Gln Asp Gly Asp Glu Glu Phe Glu Glu Glu Glu Glu Ser Glu Asn
      85                      90                      95

```

```

Lys Ser Met Asp Thr Asp Pro Glu Thr Ile Arg Asp Glu Glu Glu Thr
    100                      105                      110

```

Gly Asp His Ser Met Asp Asp Ser Ser Glu Asp Gly Lys Met Glu Thr  
 115 120 125

Lys Ser Asp His Glu Glu Asp Asn Met Glu Asp Gly Met  
 130 135 140

<210> 60  
 <211> 2168  
 <212> DNA  
 <213> Homo sapiens

<400> 60  
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 agtatgagac gaacaaagtc actcggatcc agagcatgaa ttatggcacc attaatgtgt 180  
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 aagaggagat cgtggagaat ggagtgaaga agttggtgca cagtgtcttt gacaccgcag 360  
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 aaggccaaga gcagcgggtg tgtcccagat atcccacccg caggacgctc tgttcctctg 480  
 accgaggttg taaaaagga tggtatggacc cgcagagcaa aggaattcag accggaaggt 540  
 gtgtagtga tgaagggaac cagaagacct gtgaagtctc tgccctggtgc cccatcgagg 600  
 cagtgaaga ggcccccccg cctgctctct tgaacagtgc cgaaaacttc actgtgtctc 660  
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 taaacatcac ttgtaccttc cacaagactc agaattccaca gtgtccatt ttccgactag 780  
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 aatacagttt ccgtgcctt gacgacaaga ccaccaacgt gtccttgtac cctggctaca 960  
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 gctgccgctg gaggatccgg aaagagtttc cgaagagtga agggcagtac agtggcttca 1860  
 agagtcctta ctgaagccag gcgcctgtgc tcacgtctgt aatcccagcg ctttgggagg 1920  
 ccgaggcagg cagatcacct gaggtcggga gttggagacc cgcctggcta acaaggcgaa 1980  
 atcctgtctg tactaaaaat acaaaaatca gccagacatg gtggcatgca cctgcaatcc 2040  
 cagctactcg ggaggctgag gcacaagaat cacttgaacc cgggaggcag aggtttagt 2100  
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 aaaaaaaa 2168

<210> 61  
 <211> 595  
 <212> PRT  
 <213> Homo sapiens

<400> 61  
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 1 5 10 15

Lys Val Thr Arg Ile Gln Ser Met Asn Tyr Gly Thr Ile Lys Trp Phe  
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 Phe His Val Ile Ile Phe Ser Tyr Val Cys Phe Ala Leu Val Ser Asp  
 35 40 45  
 Lys Leu Tyr Gln Arg Lys Glu Pro Val Ile Ser Ser Val His Thr Lys  
 50 55 60  
 Val Lys Gly Ile Ala Glu Val Lys Glu Glu Ile Val Glu Asn Gly Val  
 65 70 75 80  
 Lys Lys Leu Val His Ser Val Phe Asp Thr Ala Asp Tyr Thr Phe Pro  
 85 90 95  
 Leu Gln Gly Asn Ser Phe Phe Val Met Thr Asn Phe Leu Lys Thr Glu  
 100 105 110  
 Gly Gln Glu Gln Arg Leu Cys Pro Glu Tyr Pro Thr Arg Arg Thr Leu  
 115 120 125  
 Cys Ser Ser Asp Arg Gly Cys Lys Lys Gly Trp Met Asp Pro Gln Ser  
 130 135 140  
 Lys Gly Ile Gln Thr Gly Arg Cys Val Val His Glu Gly Asn Gln Lys  
 145 150 155 160  
 Thr Cys Glu Val Ser Ala Trp Cys Pro Ile Glu Ala Val Glu Glu Ala  
 165 170 175  
 Pro Arg Pro Ala Leu Leu Asn Ser Ala Glu Asn Phe Thr Val Leu Ile  
 180 185 190  
 Lys Asn Asn Ile Asp Phe Pro Gly His Asn Tyr Thr Thr Arg Asn Ile  
 195 200 205  
 Leu Pro Gly Leu Asn Ile Thr Cys Thr Phe His Lys Thr Gln Asn Pro  
 210 215 220  
 Gln Cys Pro Ile Phe Arg Leu Gly Asp Ile Phe Arg Glu Thr Gly Asp  
 225 230 235 240  
 Asn Phe Ser Asp Val Ala Ile Gln Gly Gly Ile Met Gly Ile Glu Ile  
 245 250 255  
 Tyr Trp Asp Cys Asn Leu Asp Arg Trp Phe His His Cys His Pro Lys  
 260 265 270  
 Tyr Ser Phe Arg Arg Leu Asp Asp Lys Thr Thr Asn Val Ser Leu Tyr  
 275 280 285  
 Pro Gly Tyr Asn Phe Arg Tyr Ala Lys Tyr Tyr Lys Glu Asn Asn Val  
 290 295 300  
 Glu Lys Arg Thr Leu Ile Lys Val Phe Gly Ile Arg Phe Asp Ile Leu  
 305 310 315 320  
 Val Phe Gly Thr Gly Gly Lys Phe Asp Ile Ile Gln Leu Val Val Tyr  
 325 330 335

Ile Gly Ser Thr Leu Ser Tyr Phe Gly Leu Ala Ala Val Phe Ile Asp  
 340 345 350  
 Phe Leu Ile Asp Thr Tyr Ser Ser Asn Cys Cys Arg Ser His Ile Tyr  
 355 360 365  
 Pro Trp Cys Lys Cys Cys Gln Pro Cys Val Val Asn Glu Tyr Tyr Tyr  
 370 375 380  
 Arg Lys Lys Cys Glu Ser Ile Val Glu Pro Lys Pro Thr Leu Lys Tyr  
 385 390 395 400  
 Val Ser Phe Val Asp Glu Ser His Ile Arg Met Val Asn Gln Gln Leu  
 405 410 415  
 Leu Gly Arg Ser Leu Gln Asp Val Lys Gly Gln Glu Val Pro Arg Pro  
 420 425 430  
 Ala Met Asp Phe Thr Asp Leu Ser Arg Leu Pro Leu Ala Leu His Asp  
 435 440 445  
 Thr Pro Pro Ile Pro Gly Gln Pro Glu Glu Ile Gln Leu Leu Arg Lys  
 450 455 460  
 Glu Ala Thr Pro Arg Ser Arg Asp Ser Pro Val Trp Cys Gln Cys Gly  
 465 470 475 480  
 Ser Cys Leu Pro Ser Gln Leu Pro Glu Ser His Arg Cys Leu Glu Glu  
 485 490 495  
 Leu Cys Cys Arg Lys Lys Pro Gly Ala Cys Ile Thr Thr Ser Glu Leu  
 500 505 510  
 Phe Arg Lys Leu Val Leu Ser Arg His Val Leu Gln Phe Leu Leu Leu  
 515 520 525  
 Tyr Gln Glu Pro Leu Leu Ala Leu Asp Val Asp Ser Thr Asn Ser Arg  
 530 535 540  
 Leu Arg His Cys Ala Tyr Arg Cys Tyr Ala Thr Trp Arg Phe Gly Ser  
 545 550 555 560  
 Gln Asp Met Ala Asp Phe Ala Ile Leu Pro Ser Cys Cys Arg Trp Arg  
 565 570 575  
 Ile Arg Lys Glu Phe Pro Lys Ser Glu Gly Gln Tyr Ser Gly Phe Lys  
 580 585 590  
 Ser Pro Tyr  
 595

&lt;210&gt; 62

&lt;211&gt; 430

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 62

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cctcctgatg aagtccttac tgttcaccct tgcagttttt atgctcctgg cccaattggt 120  
 ctcaggtaat tggatgtga aaaagtgtct aaacgacgtt ggaatttgca agaagaagtg 180  
 caaacctgaa gagatgcatg taaagaatgg ttgggcaatg tgcggcaaac aaagggactg 240  
 ctgtgttcca gctgacagac gtgctaatta tctgttttc tgtgtccaga caagactac 300  
 aagaatttca acagtaacag caacaacagc aacaacaact ttgatgatga ctactgcttc 360  
 gatgtcttcg atggctccta cccgtttctc ccactgggtg aacattccag cctctgtctc 420  
 ctgctctagg 430

<210> 63

<211> 121

<212> PRT

<213> Homo sapiens

<400> 63

Met Lys Ser Leu Leu Phe Thr Leu Ala Val Phe Met Leu Leu Ala Gln  
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 Leu Val Ser Gly Asn Trp Tyr Val Lys Lys Cys Leu Asn Asp Val Gly  
 20 25 30  
 Ile Cys Lys Lys Lys Cys Lys Pro Glu Glu Met His Val Lys Asn Gly  
 35 40 45  
 Trp Ala Met Cys Gly Lys Gln Arg Asp Cys Cys Val Pro Ala Asp Arg  
 50 55 60  
 Arg Ala Asn Tyr Pro Val Phe Cys Val Gln Thr Lys Thr Thr Arg Ile  
 65 70 75 80  
 Ser Thr Val Thr Ala Thr Thr Ala Thr Thr Thr Leu Met Met Thr Thr  
 85 90 95  
 Ala Ser Met Ser Ser Met Ala Pro Thr Arg Phe Ser His Trp Leu Asn  
 100 105 110  
 Ile Pro Ala Ser Val Ser Cys Ser Arg  
 115 120

<210> 64

<211> 112

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (8)

<220>

<221> unsure

<222> (12)

<220>

<221> unsure

<222> (36)

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<221> unsure

<222> (41)



&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (44)

&lt;400&gt; 64

```

tttctctgntt tnggatcccc gattcattaa agcaangggg nttnaaaaaa aaaaaaaaaa 60
aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa          112

```

&lt;210&gt; 65

&lt;211&gt; 324

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (1)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (69)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (74)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (125)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (159)

&lt;400&gt; 65

```

nctaccccaa cctgtgtggc tgggcccggc tctccctca agggcctggg gccgtgcctc 60
gggtgtacnc gtanggtct gtgtgctggg ggtggctcac cgggcagcgt gggtgagcgg 120
cgcanccggc gcagcggaga acgagagagg ggagcagana cagaatcgcc taagctgaag 180
tgtattggcg ccatcatggc tcaactgcggc ctccggctcc ttggctcggg tgattctcct 240
gcctgagcct ccctagtagc taggactaca gtgctgtaga agaaaatcac atgattggtg 300
ccctcaaaaa attggtgcca cttg                                     324

```

&lt;210&gt; 66

&lt;211&gt; 794

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (61)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (82)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (108)..(120)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (184)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (754)

&lt;400&gt; 66

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cattattttca tcaccagaga atacacatgc agcaaatagc attgtgagtc aaactatttcc 60
naaagcacag attcagcaat cnacacacac tcatctggat atctcacnnn nnnnnnnnnn 120
ttaactgatg aaaaaagtaa tggaacaatt gcccttgttg atgattctga ggatcctgga 180
gccnatgtat ctaacataca gcttcagcaa aaaatttcaa gtctggagat taaactcaaa 240
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cacgaagccc tcagcattat tgtggatgaa tataaggcac tactgcagtc ttcagttaag 480
caacaagtag aagctattga aaaacagtac atttctgcaa ttgagaaaca ggcacacaag 540
tgtgaggagt tgctaaatgc tcagcatcag aggctccttg aagtgctaga tacagagaag 600
gaactgttaa aagaaaaaat aaaggaagct ttgattcagc aatctcaaga acagaaggaa 660
atattggaaa agtgttttga ggaagaaagg caaagaaata aagaggcatt agtatccgct 720
gcaaagcttg aaaaagaacc agtgaaggat gcanttttaa aattcgtaga agaagaaaga 780
aaaaaaaaaa aaaa

```

&lt;210&gt; 67

&lt;211&gt; 164

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (156)

&lt;400&gt; 67

```

Met Glu Lys His Asn Val Leu Glu Lys Gly Phe Leu Lys Glu Lys Glu
  1              5              10              15

Gln Glu Ala Ile Ser Phe Gln Asp Arg Tyr Lys Glu Leu Gln Glu Lys
      20              25              30

His Lys Gln Glu Leu Glu Asp Met Arg Lys Ala Gly His Glu Ala Leu
      35              40              45

Ser Ile Ile Val Asp Glu Tyr Lys Ala Leu Leu Gln Ser Ser Val Lys
      50              55              60

Gln Gln Val Glu Ala Ile Glu Lys Gln Tyr Ile Ser Ala Ile Glu Lys
      65              70              75              80

Gln Ala His Lys Cys Glu Glu Leu Leu Asn Ala Gln His Gln Arg Leu
      85              90              95

Leu Glu Val Leu Asp Thr Glu Lys Glu Leu Leu Lys Glu Lys Ile Lys
      100             105             110

Glu Ala Leu Ile Gln Gln Ser Gln Glu Gln Lys Glu Ile Leu Glu Lys
      115             120             125

Cys Leu Glu Glu Glu Arg Gln Arg Asn Lys Glu Ala Leu Val Ser Ala
      130             135             140

Ala Lys Leu Glu Lys Glu Pro Val Lys Asp Ala Xaa Leu Lys Phe Val

```

145

150

155

160

Glu Glu Glu Arg

&lt;210&gt; 68

&lt;211&gt; 1494

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 68

```

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ggcacggctc gggacggaga cgaaaccaga cagaggggtca agtttacaga tgaccgtgtc 180
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cgtcggaggc ggtcaagatc tacctcccgga gagcgacgga aattgtcccg gtcccggctc 960
cgagatagac atcggcgcca ccgcagccgt tcccgagacc acagccgggg acatcgctcg 1020
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ccaggagttc tccagagagc gggcatccag agaggagtcc tgggagagcg ggcggagcga 1140
gcgagggccc ccggactgga ggcttgagag ctccaacggg aagatggctt cacggaggtc 1200
agaagagaag gaggccggcg agatctgaac ccgtctcccg ggtgctgtaa atagtctgat 1260
aaacgttcac acagtctaaa attacccttt atatttgctg aatacaactc atcttttcta 1320
gtttaaaatt tctattgttt tggagctagc tgtgagtttc tagaagtgtg cagagttgct 1380
cctgtgttcc cgggtcatgt tgagtaggaa taaataaatc tgatgctgcc tcctggaaaa 1440
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaa 1494

```

&lt;210&gt; 69

&lt;211&gt; 325

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 69

```

Met Ser Ala Gln Ala Gln Met Arg Ala Leu Leu Asp Gln Leu Met Gly
  1              5              10              15

Thr Ala Arg Asp Gly Asp Glu Thr Arg Gln Arg Val Lys Phe Thr Asp
      20              25              30

Asp Arg Val Cys Lys Ser His Leu Leu Asp Cys Cys Pro His Asp Ile
      35              40              45

Leu Ala Gly Thr Arg Met Asp Leu Gly Glu Cys Thr Lys Ile His Asp
      50              55              60

Leu Ala Leu Arg Ala Asp Tyr Glu Ile Ala Ser Lys Glu Arg Asp Leu
      65              70              75              80

Phe Phe Glu Leu Asp Ala Met Asp His Leu Glu Ser Phe Ile Ala Glu

```

| 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| Cys | Asp | Arg | Arg | Thr | Glu | Leu | Ala | Lys | Lys | Arg | Leu | Ala | Glu | Thr | Gln |  |
| 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |     |     |     |  |
| Glu | Glu | Ile | Ser | Ala | Glu | Val | Ser | Ala | Lys | Ala | Gly | Lys | Val | His | Glu |  |
| 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |     |     |  |
| Leu | Asn | Glu | Glu | Ile | Gly | Lys | Leu | Leu | Ala | Lys | Ala | Glu | Gln | Leu | Gly |  |
| 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |     |  |
| Ala | Glu | Gly | Asn | Val | Asp | Glu | Ser | Gln | Lys | Ile | Leu | Met | Glu | Val | Glu |  |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |  |
| Lys | Val | Arg | Ala | Lys | Lys | Lys | Glu | Ala | Glu | Glu | Glu | Tyr | Arg | Asn | Ser |  |
| 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |     |     |     |     |  |
| Met | Pro | Ala | Ser | Ser | Phe | Gln | Gln | Gln | Lys | Leu | Arg | Val | Cys | Glu | Val |  |
| 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |     |     |     |  |
| Cys | Ser | Ala | Tyr | Leu | Gly | Leu | His | Asp | Asn | Asp | Arg | Arg | Leu | Ala | Asp |  |
| 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |     |  |
| His | Phe | Gly | Gly | Lys | Leu | His | Leu | Gly | Phe | Ile | Gln | Ile | Arg | Glu | Lys |  |
| 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |     |  |
| Leu | Asp | Gln | Leu | Arg | Lys | Thr | Val | Ala | Glu | Lys | Gln | Glu | Lys | Arg | Asn |  |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |  |
| Gln | Asp | Arg | Leu | Arg | Arg | Arg | Glu | Glu | Arg | Glu | Arg | Glu | Glu | Arg | Leu |  |
| 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |     |     |     |     |  |
| Ser | Arg | Arg | Ser | Gly | Ser | Arg | Thr | Arg | Asp | Arg | Arg | Arg | Ser | Arg | Ser |  |
| 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |     |     |     |  |
| Arg | Asp | Arg | Arg | Arg | Arg | Arg | Ser | Arg | Ser | Thr | Ser | Arg | Glu | Arg | Arg |  |
| 275 |     |     |     |     | 280 |     |     |     |     | 285 |     |     |     |     |     |  |
| Lys | Leu | Ser | Arg | Ser | Arg | Ser | Arg | Asp | Arg | His | Arg | Arg | His | Arg | Ser |  |
| 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |     |  |
| Arg | Ser | Arg | Ser | His | Ser | Arg | Gly | His | Arg | Arg | Ala | Ser | Arg | Asp | Arg |  |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |  |
| Ser | Ala | Lys | Tyr | Lys |     |     |     |     |     |     |     |     |     |     |     |  |
| 325 |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |  |

<210> 70  
 <211> 1761  
 <212> DNA  
 <213> Homo sapiens

<400> 70  
 caagggaagt tctgagggct gagaggttgc tcatttcgtca gagegtgctg cccaccctcc 60  
 acccctgcat ggcagaaact gtgcagggga cgaggccaag gaatcaggag acccagaggc 120  
 aggggtggcc cggagacggt gaagaaacca agacgcagag aggccaagcc ccttgcttg 180  
 ggtcacacag ccaaaggagg cagagccaga actcacaacc agatccagag gcaacaggga 240  
 catggccacc tgggacgaaa aggagtcac ccgcagggcc aagggtggctc ccgctgagag 300  
 gatgagcaag ttcttaaggc acttcacggt cgtgggagac gactaccatg cctggaacat 360

```

caactacaag aaatgggaga atgaagagga ggaggaggag gaggagcagc caccacccac 420
accagtctca ggcgaggaag gcagagctgc agcccctgac gttgcccctg cccctggccc 480
cgcacccagg gcccccttg acttcagggg catgttgagg aaactgttca gctcccacag 540
gtttcaggtc atcatcatct gcttggtggt tctggatgcc ctcttggtgc ttgctgagct 600
catctgggac ctgaagatca tccagcccga caagaataac tatgctgcca tggatttcca 660
ctacatgagc atcaccatct tggctctttt tatgatggag atcatcttta aattatttgt 720
cttccgcctg gagttctttc accacaagtt tgagatcctg gatgccgtcg tgggtggtgt 780
ctcattcatc ctgcacattg tcctcctggt ccaggagcac cagtttgagg ctctgggctc 840
gctgattctg ctccggtgtg ggcgggtggc ccggatcatc aatgggatta tcattctcagt 900
taagacacgt tcagaacggc aactcttaag gttaaaacag atgaatgtac aattggccgc 960
caagattcaa caccttgagt tcagctgctc tgagaaggaa caagaaattg aaagacttaa 1020
caactatttg cgacagcatg gacttcttgg tgaagtgaac tagaccggga ccagctcccc 1080
tcaaaaagaa gacactgtct catgggcctg tgctgtcacg agagggaacag ctgcccctcc 1140
tgggcccgtt ggtgagaggt ttggtttgat acctctgctt cctcctgccc agcatggatt 1200
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aatgagcaac aaagctggac aattgctagt tgtatataaa atttaatctc accgaatgta 1380
cagttttcaa atttcacgtg tatattaagg aactgatgca tctgagcatt ctgaaagaaa 1440
gaaaaagaag ctacttttagc tgccacccca ttctagaaaa gtctcttatt ttcaagctgt 1500
tctaaatagc ttcgtctcag tttcccaaaa aggggtaccc agggccctcc tctgtgtgcc 1560
ccagctgcat cagccagctt ctagggtggc ccattgtttt ctgccacctg acaacatttt 1620
tcctcaatta ctgtacaact actgtataaa ataaaacaac tactgtataa aataaactct 1680
ctcttttccc tggaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1740
aaaaaaaaaa aaaaaaaaaa a 1761

```

&lt;210&gt; 71

&lt;211&gt; 273

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 71

```

Met Ala Thr Trp Asp Glu Lys Ala Val Thr Arg Arg Ala Lys Val Ala
  1                      5                      10                      15

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```

Pro Ala Glu Arg Met Ser Lys Phe Leu Arg His Phe Thr Val Val Gly
          20                      25                      30

```

```

Asp Asp Tyr His Ala Trp Asn Ile Asn Tyr Lys Lys Trp Glu Asn Glu
          35                      40                      45

```

```

Glu Glu Glu Glu Glu Glu Glu Gln Pro Pro Pro Thr Pro Val Ser Gly
          50                      55                      60

```

```

Glu Glu Gly Arg Ala Ala Ala Pro Asp Val Ala Pro Ala Pro Gly Pro
          65                      70                      75                      80

```

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Ala Pro Arg Ala Pro Leu Asp Phe Arg Gly Met Leu Arg Lys Leu Phe
          85                      90                      95

```

```

Ser Ser His Arg Phe Gln Val Ile Ile Ile Cys Leu Val Val Leu Asp
          100                      105                      110

```

```

Ala Leu Leu Val Leu Ala Glu Leu Ile Leu Asp Leu Lys Ile Ile Gln
          115                      120                      125

```

```

Pro Asp Lys Asn Asn Tyr Ala Ala Met Val Phe His Tyr Met Ser Ile
          130                      135                      140

```

```

Thr Ile Leu Val Phe Phe Met Met Glu Ile Ile Phe Lys Leu Phe Val
          145                      150                      155                      160

```

Phe Arg Leu Glu Phe Phe His His Lys Phe Glu Ile Leu Asp Ala Val  
                   165                                  170                                  175  
 Val Val Val Val Ser Phe Ile Leu Asp Ile Val Leu Leu Phe Gln Glu  
                   180                                  185                                  190  
 His Gln Phe Glu Ala Leu Gly Leu Leu Ile Leu Leu Arg Leu Trp Arg  
                   195                                  200                                  205  
 Val Ala Arg Ile Ile Asn Gly Ile Ile Ile Ser Val Lys Thr Arg Ser  
                   210                                  215                                  220  
 Glu Arg Gln Leu Leu Arg Leu Lys Gln Met Asn Val Gln Leu Ala Ala  
                   225                                  230                                  235                                  240  
 Lys Ile Gln His Leu Glu Phe Ser Cys Ser Glu Lys Glu Gln Glu Ile  
                   245                                  250                                  255  
 Glu Arg Leu Asn Lys Leu Leu Arg Gln His Gly Leu Leu Gly Glu Val  
                   260                                  265                                  270

Asn

<210> 72  
 <211> 928  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (367)

<220>  
 <221> unsure  
 <222> (448)

<220>  
 <221> unsure  
 <222> (467)

<220>  
 <221> unsure  
 <222> (508)

<220>  
 <221> unsure  
 <222> (539)

<400> 72  
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 gccaccatga agattgataa ccctcacata acatatactg ccagggtccc agtcgatgtc 120  
 catgaataca acctaacgca tctgcagcct tccacagatt atgaagtgtg tctcacagt 180  
 tccaatatc atcagcagac tcaaaaagtc tgcgtaaatg tcacaaccaa aaatgccgcc 240  
 ttcgcagtgg acatctctga tcaagaaacc agtacagccc ttgctgcagt aatgggggtmt 300  
 atgtttgccg tcattagcct tgcgtccatt gctgtggtac tttgccaaaa gatttaagag 360  
 aaaaaantac caccactcat taaaaaagta tatgcaaaaa acctcttcaa tccactaaa 420  
 tgagctgtac ccaccactca ttaacctntg ggaagggtgac agcgagnaag acaaagatgg 480

ttttgcagac accaagccaa cccaggtnga cacatccaga aggtattaca tgtggtaant 540  
 cagaggatat tttgcttctg gtagtaagga gcacaaagac gtttttgctt tattctgcaa 600  
 aagtgaacaa gttgaagact tttgtatttt tgactttgct agtttgtggc agagtggaga 660  
 ggacgggtgg atatttcaaa tttttttagt atagcgtatc gcaaggggtt gacacggctg 720  
 ccagcgactc taggcttcca gtctgtgttt gggtttttatt cttatcatta ttatgattgt 780  
 tattatatta ttattttatt ttagttgttg tgctaaactc aataatgctg ttctaactac 840  
 agtgctcaat aaaatgatta atgacaggat ggggttcccc tgtgctttta ccagtagcat 900  
 gacccttcct gaagccatcc gtagaaag 928

<210> 73

<211> 52

<212> PRT

<213> Homo sapiens

<400> 73

Met Ile Val Ile Ile Leu Leu Phe Tyr Phe Ser Cys Cys Ala Lys Leu  
 1 5 10 15

Asn Asn Ala Val Leu Thr Thr Val Leu Asn Lys Met Ile Asn Asp Arg  
 20 25 30

Met Gly Phe Pro Cys Ala Phe Thr Ser Ser Met Thr Leu Pro Glu Ala  
 35 40 45

Ile Arg Arg Lys  
 50

<210> 74

<211> 49

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (9)

<400> 74

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<210> 75

<211> 597

<212> DNA

<213> Homo sapiens

<400> 75

attctacaag ataacttccc agtactttaaa aaaagtctca aagtcataaa caagaaagaa 60  
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 attaaatcct ggaccagcaa aaggacatta gtgggaaaat tgatgaaatt caaatgagat 180  
 cttatattga agttaattgt gtcagtgtac atttcctggc ttccataatt gcaagtgatt 240  
 atgtaagggt tgtaaatatt aggagcagct gggtaaagggt tatacaaaaa ctctatacta 300  
 tttttgcatt tttttctgta agtttaaaac attttccaac taaaaagttg aaaacacatg 360  
 tattagagac acatgcgtat gtgtctctaa taatcttaaa tatatttaag atgatagaag 420  
 gaattcttga gatagtaaaa tgaagtcacc aaaaaacaaa caaagaaaca aaacgaaatc 480  
 accaaaatct atcaataaat ttcaggtaat acttttggca gattcattcc tttgagatgg 540  
 agtctcactc ccagtctggg caacgagcga aactccgtct aaaaaaaaaa aaaaaaa 597

<210> 76

<211> 89

<212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 76

Met Arg Ser Tyr Ile Glu Val Asn Cys Val Ser Val His Phe Leu Val  
 1 5 10 15

Phe Ile Ile Ala Ser Asp Tyr Val Arg Phe Val Asn Ile Arg Ser Ser  
 20 25 30

Trp Val Lys Val Ile Gln Lys Leu Tyr Thr Ile Phe Ala Phe Phe Ser  
 35 40 45

Val Ser Leu Lys His Phe Pro Thr Lys Lys Leu Lys Thr His Val Leu  
 50 55 60

Glu Thr His Ala Tyr Val Ser Leu Ile Ile Leu Asn Ile Phe Lys Met  
 65 70 75 80

Ile Glu Gly Ile Leu Glu Ile Val Lys  
 85

&lt;210&gt; 77

&lt;211&gt; 1804

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (1794)

&lt;400&gt; 77

ggagttcatt aggccagtg cactgatttt tccctcccat catagctatt tattctagta 60  
 agaggataat aaaagaaatt tcctatacaa gaactgaaat ttccatttg tatggatcta 120  
 gtcactttca gatttcaatt tgaggttaag tatataaagc acatcccaat tttatatgct 180  
 gccttgagaa aattacagga tgcacggcaa ttgttaggaa ttccaaatgg gatcatttaa 240  
 acatttgaaa aattatttta aaaaccatct agtttgcttt tggattttag acattaaagc 300  
 ctatgttgct ttgttaacag ggggtggaatg tataaccatc agattcagca tgtgatttca 360  
 cctttgaatc tgagtatttc tccctatctc tctttgagtc atttttgagg cagactgtca 420  
 ccagtattga taactaagca ttaaaggga aagtgcatt gcaactatgc attggtttcc 480  
 tggaagaact tttcttttgt tttagtgaat gaagaggctt gatgggatca cttactgtaa 540  
 ctctctctac ataaggaccc ctcttgcaag cagaacacaa aagaacatgc tcaaggagta 600  
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 catttgagtg gagtcttatt ttactccaa gaggcgttat tcccttctag tctaaaattg 780  
 gcagtttttt ctttttttta ataaaatttt taaaatattc ccaaaccagt ggaacacaga 840  
 cactggctgc acttagtact gccaaaagcc aaggctattt gcacatattc catcaacctg 900  
 tcgagaatta ggcctcactt tataacccaa ggcattggaag tgcattgcatt ctcttagctg 960  
 ggcaaacaat tatactgtag ttgtgataca acacatgttg cttttatttg tactgcacat 1020  
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 aattgtacaa ccgattgtga agctctagtg tgaatatttt tacgtctgta ttagacattt 1260  
 tctttgcaaa tctattgttc gattgaaatg taaatgaaat taaagatgggt gtacacccat 1320  
 catgtaaaaa gcaggcacca tctctaagat ggatttaatg ctcatattta aggcataatac 1380  
 tcagcttcta tttaaaacta taatttaaaa taattctgta caatgaaatg gggaatatat 1440  
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 ttgtgctata ggaataggat taaatggggg aagactagga tttataaggc ctgtatatgg 1560  
 ggggagggga gagatggaac aatgagggtt gtgatgatag tgaatagcaa agagtgaatt 1620  
 ctgtgtgttt ttgctgtagc actgaagtga agagatatta gctttggctg ttcacaaaat 1680



agagcatcat gattttcagt gtttgagaga aaattgatgg aaaaagtttg cagtacttga 1740  
 catgtatttg catgcacaaa ataaaattat ttgtccacct taaaaaaaaa aaanaaaaaa 1800  
 aaaa 1804

<210> 78  
 <211> 37  
 <212> PRT  
 <213> Homo sapiens

<400> 78  
 Met Lys Arg Leu Asp Gly Ile Thr Tyr Cys Asn Ser Phe Tyr Ile Arg  
 1 5 10 15  
 Thr Pro Ser Ala Ser Arg Thr Gln Lys Asn Met Leu Lys Glu Tyr Pro  
 20 25 30

Ile Phe Trp Ile Asn  
 35

<210> 79  
 <211> 360  
 <212> DNA  
 <213> Homo sapiens

<400> 79  
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 gcacataatt cactggattg aaagcaaagc ctcatttggt gatgaatgta gccaccacgc 180  
 ctacctgcat gaccagttct ggagctactg gaatagggtc ccaatataac agacaaatgg 240  
 tgaaacagag ggatactcac taggaaacag atttggggcca ggcttagtca tctattggtg 300  
 tggatttatt caggagctgg actgcaaccg ggaaaggggc atcctgctca aagcctgttt 360

<210> 80  
 <211> 20  
 <212> PRT  
 <213> Homo sapiens

<400> 80  
 Met Asp Leu Ser Arg Ser Trp Thr Ala Thr Gly Lys Gly Ala Ser Cys  
 1 5 10 15

Ser Lys Pro Val  
 20

<210> 81  
 <211> 202  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (136)

<220>  
 <221> unsure  
 <222> (138)

<400> 81

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aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 60
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 120
aaaaaaaaa aaaaantnaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 180
aaaaaaaaa aaaaaaaaaa aa 202

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<210> 82
<211> 1189
<212> DNA
<213> Homo sapiens

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<220>
<221> unsure
<222> (1155)

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<400> 82
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agagagaata ratggtaaat gtttcttttc aggtctttta aagtgtcagg ctatcagtta 180
acctctccta gatctcagaa atgcctagaa agagaagtcc tggctacatc aatggaaatt 240
ctccacagat gcaaattttc tctacaaaag atggcctttg agagccacct cagtctgttg 300
tccctgtagc agccatttca aattatgtca aagagatata ttttggggta aaatattttg 360
attatcttca ttagtatatc tcaattttgt caatacaaac ctgagagtta tagtcagagg 420
ttgaattttc atttcaaaat gttttcttag ttttttttct cttttttgtt ttattgtaag 480
ttgacaattt ataattgtat aaaagtatga ggtacaaagt gatgttatag cttaagaata 540
cagtatggta tgattaaatc aagttattaa cctatccttc acgttaaagt cttaaatttt 600
ttgatgagaa catttgaaat ttactcttgg aaggtaaaaa aaaatctcag gaccccccaa 660
attaaagcca tgaagctgaa ttgtgcaaca tcctcttcca aatggaagct tgtcttccag 720
gtacagaaca aaaacaagac tcatttcttc acctgcctaa agatgtgcac ataattggct 780
cctcctttac tccctttttc tcttctaaca ttcattatat cttgtgtaaa atgtagattt 840
actggacact aactaaaatt tcacagggtt gtacccattt gccttactgc ctacctacct 900
gtyttcctac gtaccttytc cccactttta ggaatgcata catattaaac ctccccaaaa 960
cytyttttaga aaaatagcca cagggtttatc tgtggctggg gtgtttccct agatgcacty 1020
taaagctggc ttaataaacc tcagtgtatt aaacttatgc ctcaatcact cattttgggt 1080
gtcactgtct taccaatttg aaatgtaaaa tattytacta ctaattatat ttaccacatt 1140
gtgcaacaga actcnaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 1189

```

```

<210> 83
<211> 56
<212> PRT
<213> Homo sapiens

```

```

<400> 83
Met Arg Thr Phe Glu Ile Tyr Ser Trp Lys Val Lys Lys Asn Leu Arg
  1             5             10            15

Thr Pro Gln Ile Lys Ala Met Lys Leu Asn Cys Ala Thr Ser Ser Ser
      20             25             30

Lys Trp Lys Leu Val Phe Gln Val Gln Asn Lys Asn Lys Thr His Phe
      35             40             45

Phe Thr Cys Leu Lys Met Cys Thr
      50             55

```

```

<210> 84
<211> 525
<212> DNA
<213> Homo sapiens

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<400> 84  
cataacagcg tcagagagaa agaactgact gaaacgtttg agatgaagaa agttctcttc 60  
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gaaaaaagaa gtatcagtga cagcgatgaa ttagcttcag ggttttttgt gttcccttac 180  
ccatatccat ttcgcccact tccaccaatt ccatttccaa gatttccatg gtttagacgt 240  
aattttccta ttccaatacc tgaatctgcc cctacaactc cccttcctag cgaaaagtaa 300  
acaagaagga aaagtcacga taaacctggt cacctgaaat tgaaattgag ccacttcctt 360  
gaagaatcaa aattcctggt aataaaagaa aaacaaatgt aattgaaata gcacacagca 420  
ttctctagtc aatatcttta gtgatyttyt ttaataaaca tgraagcaaa graaaaaaaa 480  
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 525

<210> 85  
<211> 85  
<212> PRT  
<213> Homo sapiens

<400> 85  
Met Lys Lys Val Leu Leu Ile Thr Ala Ile Leu Ala Val Ala Val  
1 5 10 15  
Gly Phe Pro Val Ser Gln Asp Gln Glu Arg Glu Lys Arg Ser Ile Ser  
20 25 30  
Asp Ser Asp Glu Leu Ala Ser Gly Phe Phe Val Phe Pro Tyr Pro Tyr  
35 40 45  
Pro Phe Arg Pro Leu Pro Pro Ile Pro Phe Pro Arg Phe Pro Trp Phe  
50 55 60  
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Leu Pro Ser Glu Lys  
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<210> 86  
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&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (270)

&lt;400&gt; 86

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&lt;210&gt; 87

&lt;211&gt; 563

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (63)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (83)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (116)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (177)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (183)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (228)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (240)

&lt;400&gt; 87

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gttggaaga ttactctact gaatctcaac ctgggtttat acaagggtac catgtctatc 540
tgaaatccaa ggcgaggcag tgc 563

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&lt;210&gt; 88

&lt;211&gt; 58

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 88

Arg Lys Lys Thr Gly Tyr Ser Gln Glu Leu Ala Pro Ser Asp Asn Pro  
 1 5 10 15

His Val Leu Val Asp Thr Leu Thr Ser His Ser Phe Thr Leu Ser Trp  
 20 25 30

Lys Asp Tyr Ser Thr Glu Ser Gln Pro Gly Phe Ile Gln Gly Tyr His  
 35 40 45

Val Tyr Leu Lys Ser Lys Ala Arg Gln Cys  
 50 55

&lt;210&gt; 89

&lt;211&gt; 361

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (102)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (105)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (153)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (186)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (191)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (252)..(253)

&lt;400&gt; 89

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&lt;210&gt; 90

&lt;211&gt; 756

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

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 tgccaatgga aagatccctgt tctataatgt agttgtagaa aacctagaca aaccatccag 180  
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 ttctaccaca atctgcgtca tagccaacaa cagtgtgggt gcttctcttg cttctgtaat 300  
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<210> 91  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 91  
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 20 25 30  
 Lys Asp Tyr Ser Thr Glu Ser Gln Pro Gly Phe Ile Gln Gly Tyr His  
 35 40 45  
 Val Tyr Leu Lys Ser Lys Ala Arg Gln Cys  
 50 55

<210> 92  
 <211> 79  
 <212> DNA  
 <213> Homo sapiens

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<210> 93

<211> 1939  
 <212> DNA  
 <213> Homo sapiens

<400> 93  
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 aatgtttgat agactatact agtgaaagca tctgggccta gggttttctc tgtggaagat 300  
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<210> 94  
 <211> 52  
 <212> PRT  
 <213> Homo sapiens

<400> 94  
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 Leu Ile Cys Val Leu Ser Pro Ser Ile Pro Leu Ser Leu Ser Leu Val  
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 Ser Trp Ser Val Gly Leu Ser Pro Leu Leu Ile Phe Ser Glu Asn His  
 35 40 45  
 Phe Leu Phe Leu  
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<210> 95  
 <211> 1252

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 95

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aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa 1252

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&lt;210&gt; 96

&lt;211&gt; 289

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 96

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Met Asp Ala Ile Leu Leu Ser Leu Thr Arg Lys Val Lys Met Pro Asp
  1              5              10              15

Val Glu Leu Phe Val Asn Leu Gly Asp Trp Pro Leu Glu Lys Lys Lys
      20              25              30

Ser Asn Ser Asn Ile His Pro Ile Phe Ser Trp Cys Gly Ser Thr Asp
      35              40              45

Ser Lys Asp Ile Val Met Pro Thr Tyr Asp Leu Thr Asp Ser Val Leu
      50              55              60

Glu Thr Met Gly Arg Val Ser Leu Asp Met Met Ser Val Gln Ala Asn
      65              70              75              80

Thr Gly Pro Pro Trp Glu Ser Lys Asn Ser Thr Ala Val Trp Arg Gly
      85              90              95

Arg Asp Ser Arg Lys Glu Arg Leu Glu Leu Val Lys Leu Ser Arg Lys
      100             105             110

His Pro Glu Leu Ile Asp Ala Ala Phe Thr Asn Phe Phe Phe Phe Lys
      115             120             125

His Asp Glu Asn Leu Tyr Gly Pro Ile Val Lys His Ile Ser Phe Phe
      130             135             140

Asp Phe Phe Lys His Lys Tyr Gln Ile Asn Ile Asp Gly Thr Val Ala

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145                      150                      155                      160  
 Ala Tyr Arg Leu Pro Tyr Leu Leu Val Gly Asp Ser Val Val Leu Lys  
                                  165                                   170                                   175  
 Gln Asp Ser Ile Tyr Tyr Glu His Phe Tyr Asn Glu Leu Gln Pro Trp  
                                  180                                   185                                   190  
 Lys His Tyr Ile Pro Val Lys Ser Asn Leu Ser Asp Leu Leu Glu Lys  
                                  195                                   200                                   205  
 Leu Lys Trp Ala Lys Asp His Asp Glu Glu Ala Lys Lys Ile Ala Lys  
                                  210                                   215                                   220  
 Ala Gly Gln Glu Phe Ala Arg Asn Asn Leu Met Gly Asp Asp Ile Phe  
 225                                   230                                   235                                   240  
 Cys Tyr Tyr Phe Lys Leu Phe Gln Glu Tyr Ala Asn Leu Gln Val Ser  
                                  245                                   250                                   255  
 Glu Pro Gln Ile Arg Glu Gly Met Lys Arg Val Glu Pro Gln Thr Glu  
                                  260                                   265                                   270  
 Asp Asp Leu Phe Pro Cys Thr Cys His Arg Lys Lys Thr Lys Asp Glu  
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 <211> 492  
 <212> DNA  
 <213> Homo sapiens

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 aaaaatgtgg aggccattcg ggagctgaat gaggatctcg aacaatttgt tggagaccaa 480  
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<210> 98  
 <211> 159  
 <212> PRT  
 <213> Homo sapiens

<400> 98  
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                                   20                                  25                                  30  
 Ile Val Glu Val Gly Glu Glu Leu Ile Asn Glu Tyr Ala Ser Lys Leu  
                                   35                                  40                                  45

Gly Asp Asp Ile Trp Ile Ile Tyr Glu Gln Val Met Ile Ala Ala Leu  
 50 55 60  
 Asp Tyr Gly Arg Asp Asp Leu Ala Leu Phe Cys Leu Gln Glu Leu Arg  
 65 70 75 80  
 Arg Gln Phe Pro Gly Ser His Arg Val Lys Arg Leu Thr Gly Met Arg  
 85 90 95  
 Phe Glu Ala Met Glu Arg Tyr Asp Asp Ala Ile Gln Leu Tyr Asp Arg  
 100 105 110  
 Ile Leu Gln Glu Asp Pro Thr Asn Thr Ala Ala Arg Lys Arg Lys Ile  
 115 120 125  
 Ala Ile Arg Lys Ala Gln Gly Lys Asn Val Glu Ala Ile Arg Glu Leu  
 130 135 140  
 Asn Glu Tyr Leu Glu Gln Phe Val Gly Asp Gln Glu Ala Trp His  
 145 150 155

<210> 99  
 <211> 85  
 <212> DNA  
 <213> Homo sapiens

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 <222> (20)

<220>  
 <221> unsure  
 <222> (27)

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 aaaaaaaaaa aaaaaaaaaa aaaaaa 85

<210> 100  
 <211> 313  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (68)

<220>  
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<220>  
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<220>  
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 <222> (288)

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 ggcctgaaag aagaagtgtg gaaattgata acaaaaacaa aaccatcaca gcatatcatg 180  
 aatctgggtca tgccattatt gcatattaca caaaagatgc aatgcctatc aacaaagcta 240  
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<210> 102  
 <211> 166  
 <212> PRT  
 <213> Homo sapiens

<220>  
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 <222> (125)..(126)

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 20 25 30  
 Thr Ala Tyr His Glu Ser Gly His Ala Ile Ile Ala Tyr Tyr Thr Lys  
 35 40 45  
 Asp Ala Met Pro Ile Asn Lys Ala Thr Ile Met Pro Arg Gly Pro Thr  
 50 55 60  
 Leu Gly His Val Ser Leu Leu Pro Glu Asn Asp Arg Trp Asn Glu Thr

|   |     |     |     |
|---|-----|-----|-----|
| 65  | 70  | 75  | 80  |
| Arg Ala Gln Leu Leu Ala Gln Met Asp Val Ser Met Gly Gly Arg Val |     |     |     |
| 85  | 90  | 95  |     |
| Ala Glu Glu Leu Ile Phe Gly Thr Asp His Ile Thr Thr Gly Ala Ser |     |     |     |
| 100   | 105 | 110 |     |
| Ser Asp Phe Asp Asn Ala Thr Lys Ile Ala Lys Arg Xaa Xaa Thr Lys |     |     |     |
| 115   | 120 | 125 |     |
| Phe Gly Met Ser Glu Lys Leu Gly Val Met Thr Tyr Ser Asp Thr Gly |     |     |     |
| 130   | 135 | 140 |     |
| Glu Thr Lys Ser Arg Asn Pro Ile Cys His Arg Thr Arg Asn Lys Asn |     |     |     |
| 145   | 150 | 155 | 160 |
| Pro Ser Lys Gly Leu Ile   |     |     |     |
| 165   |     |     |     |

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 <212> DNA  
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 attttggttt cggtatgcaa gtatttcatt gtatgaatta ccagtttggt caattagttt 1020  
 tctttgataa catttggtt gcttctagtc ttttggtatw acagagtctt gcaatgaata 1080  
 gtcttatgct tatatgtttt gtggtttctg gcaaggattt caacgtaatt taaggctatc 1140  
 ctctacttaa gttatggcca attaatgtgc tgattaaatg tctgtaataa tttaaaaata 1200  
 acaatactta atttaaaaga gcttataata cataattatt cattagagag atgcagcaaa 1260  
 ccaccatggc aaatgtattc ctatgtaaca aacctgcacg ttcagcaagt gtatcccagc 1320  
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<210> 104  
 <211> 86  
 <212> PRT  
 <213> Homo sapiens

<400> 104  
 Met Pro Val Ala Thr Glu Leu Val Ile Val Ser Arg Ile Tyr Gln Tyr  
 1 5 10 15

Ile Glu Gln Ile Ile Met Phe Cys Phe Val Leu Phe Leu Phe Leu Tyr  
                   20                  25                  30

Phe Arg Asn Ser Thr Ala Thr Tyr Lys Ser Ser Leu Glu Leu Ser Gly  
           35                  40                  45

Tyr Leu Lys Ser Glu Ala Ser Thr Phe Leu Arg Thr Lys His Arg Asn  
       50                  55                  60

Asp Glu Met Ser Tyr Lys Tyr Pro Phe Ile Leu Phe His Asn Thr Tyr  
       65                  70                  75                  80

Ile Asp Leu Leu Tyr Val  
                   85

<210> 105  
 <211> 479  
 <212> DNA  
 <213> Homo sapiens

<400> 105  
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 tgggggactc ctcaggacgg actcccttcc agatgcaccc atctccatcc ttctcaactc 120  
 cccaaccttt gtcttcccca ctcttcgctc gcgcggcggg ctgagaccac caggaccagt 180  
 ttcagggggt tccttctcca gcgagacttg gcagaacagg ctttaaaagc aaaggaggca 240  
 gcggaagact gtgaattcct ttggacaatt gatgatattt atcattgtgc ccagtttcta 300  
 caaataaaaag atgggtggat tattttctcg atggaggaca aaaccttcaa ctgtagaagt 360  
 tctagaaagt atagataagg aaattcaagc attggaagaa tttagggaaa aaaaaaaaaa 420  
 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 479

<210> 106  
 <211> 33  
 <212> PRT  
 <213> Homo sapiens

<400> 106  
 Met Gly Gly Leu Phe Ser Arg Trp Arg Thr Lys Pro Ser Thr Val Glu  
       1                  5                  10                  15

Val Leu Glu Ser Ile Asp Lys Glu Ile Gln Ala Leu Glu Glu Phe Arg  
           20                  25                  30

Glu

<210> 107  
 <211> 333  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (70)

<220>  
 <221> unsure  
 <222> (156)

<220>  
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 <222> (184)

<220>  
 <221> unsure  
 <222> (207)

<220>  
 <221> unsure  
 <222> (308)

<400> 107  
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 agtggagaga ggccactccc tctccagccc ccgatntgga cccgggggag gggaggctga 180  
 tgcntttggc cccggcctgg ccaaaanagc ccatccccag ggcagtttca ggtgccggct 240  
 gggccctgaa tgtcaaggat aatatatagc ccgctcctgg gtcctggagc tgtggccctt 300  
 tgtactcntg ttgtgtccat tgtgtgtgtg cgt 333

<210> 108  
 <211> 611  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (62)

<220>  
 <221> unsure  
 <222> (185)

<220>  
 <221> unsure  
 <222> (192)

<220>  
 <221> unsure  
 <222> (249)

<220>  
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 <222> (290)

<400> 108  
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 gggctgagtg gggtcgggtg aggcagaggt cagaaacaga agagctgcag ttgctggagc 180  
 tgggntgaga antgggctgc ctctgccat ccccccgtct cctcccttc tcccttgggt 240  
 gccccctnt gctcagaatc tgaagtagtt ccctcctcag caatttcatt tcttgaacac 300  
 tgactcacac cttttaggca cctactgtgt gcatagcatt ccaccaggac tcatctccct 360  
 tccttctcag ggggtcccgga gccccgacta gctttgccct aactccttca tcaaaagacc 420  
 ccccgccagc ttccacacac tcatacgcag ccacatctgc cctattctcc atgctttcca 480  
 gcttgctgc ccttccctcat ctctccctgc ctgtgcagac ctccaccctt ctttcctcca 540  
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 ctgatcgtcc a 611

<210> 109  
 <211> 47

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 109

Met Leu Ser Ser Leu Pro Ala Leu Pro His Leu Ser Leu Pro Val Gln  
 1 5 10 15

Thr Ser Thr Leu Leu Ser Ser Thr Pro Pro Ser Pro Asn Ala Cys Arg  
 20 25 30

Pro Ser Ile His Ser Val Ser Ser Cys Val Val Ser Asp Arg Pro  
 35 40 45

&lt;210&gt; 110

&lt;211&gt; 274

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 110

atccaggggcg tggggagacc attggcattt gggaaccatt ttccttcgaa cggcttcccc 60  
 ttgagctgag cattctgctt gctgcagtag acgggtcgcc ttttgcccat accgaaattt 120  
 tctgaaatta aatcgcacac cccaccatt tctctcccc tgggatctgg aggaacatca 180  
 tacatagtag gtgaatcggt ttgtagagt aagaatgcta atgtaaagca aatagtcacc 240  
 cacgttcctt tgtaaatcca aaaaaaaaaa aaaa 274

&lt;210&gt; 111

&lt;211&gt; 1646

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 111

catcgggtgg actagctggg atctccgcat tggatttggg gctgattacc actgcttgcc 60  
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 aacggtggga tttatttaac atgatcttgg caaacgtctt ctgctcttc ttctttctag 180  
 acgagaccct ccgctctttg gccagccctt cctccctgca gggccccgag ctccacggct 240  
 ggcgcccccc agtggactgt gtccgggcca atgagctgtg tgccgcccga tccaactgca 300  
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 ccaacaagga gtgccaggcg gccttgaggg tcttgaggga gagcccgctg tacgactgcc 420  
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 gcctctcgga catcttcagg cttgcttcaa tcttctcagg gacaggggca gaccgggtgg 600  
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 acacaccttg caaaaaaaaaa aaaaaa 1646

&lt;210&gt; 112

&lt;211&gt; 464

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 112

Met Ile Leu Ala Asn Val Phe Cys Leu Phe Phe Phe Leu Asp Glu Thr  
 1 5 10 15

Leu Arg Ser Leu Ala Ser Pro Ser Ser Leu Gln Gly Pro Glu Leu His  
 20 25 30

Gly Trp Arg Pro Pro Val Asp Cys Val Arg Ala Asn Glu Leu Cys Ala  
 35 40 45

Ala Glu Ser Asn Cys Ser Ser Arg Tyr Arg Thr Leu Arg Gln Cys Leu  
 50 55 60

Ala Gly Arg Asp Arg Asn Thr Met Leu Ala Asn Lys Glu Cys Gln Ala  
 65 70 75 80

Ala Leu Glu Val Leu Gln Glu Ser Pro Leu Tyr Asp Cys Arg Cys Lys  
 85 90 95

Arg Gly Met Lys Lys Glu Leu Gln Cys Leu Gln Ile Tyr Trp Ser Ile  
 100 105 110

His Leu Gly Leu Thr Glu Gly Glu Glu Phe Tyr Glu Ala Ser Pro Tyr  
 115 120 125

Glu Pro Val Thr Ser Arg Leu Ser Asp Ile Phe Arg Leu Ala Ser Ile  
 130 135 140

Phe Ser Gly Thr Gly Ala Asp Pro Val Val Ser Ala Lys Ser Asn His  
 145 150 155 160

Cys Leu Asp Ala Ala Lys Ala Cys Asn Leu Asn Asp Asn Cys Lys Lys  
 165 170 175

Leu Arg Ser Ser Tyr Ile Ser Ile Cys Asn Arg Glu Ile Ser Pro Thr  
 180 185 190

Glu Arg Cys Asn Arg Arg Lys Cys His Lys Ala Leu Arg Gln Phe Phe  
 195 200 205

Asp Arg Val Pro Ser Glu Tyr Thr Tyr Arg Met Leu Phe Cys Ser Cys  
 210 215 220

Gln Asp Gln Ala Cys Ala Glu Arg Arg Arg Gln Thr Ile Leu Pro Ser  
 225 230 235 240

Cys Ser Tyr Glu Asp Lys Glu Lys Pro Asn Cys Leu Asp Leu Arg Gly  
 245 250 255

Val Cys Arg Thr Asp His Leu Cys Arg Ser Arg Leu Ala Asp Phe His  
 260 265 270

Ala Asn Cys Arg Ala Ser Tyr Gln Thr Val Thr Ser Cys Pro Ala Asp  
 275 280 285



Asn Tyr Gln Ala Cys Leu Gly Ser Tyr Ala Gly Met Ile Gly Phe Asp  
 290 295 300  
 Met Thr Pro Asn Tyr Val Asp Ser Ser Pro Thr Gly Ile Val Val Ser  
 305 310 315 320  
 Pro Trp Cys Ser Cys Arg Gly Ser Gly Asn Met Glu Glu Glu Cys Glu  
 325 330 335  
 Lys Phe Leu Arg Asp Phe Thr Glu Asn Pro Cys Leu Arg Asn Ala Ile  
 340 345 350  
 Gln Ala Phe Gly Asn Gly Thr Asp Val Asn Val Ser Pro Lys Gly Pro  
 355 360 365  
 Ser Phe Gln Ala Thr Gln Ala Pro Arg Val Glu Lys Thr Pro Ser Leu  
 370 375 380  
 Pro Asp Asp Leu Ser Asp Ser Thr Ser Leu Gly Thr Ser Val Ile Thr  
 385 390 395 400  
 Thr Cys Thr Ser Val Gln Glu Gln Gly Leu Lys Ala Asn Asn Ser Lys  
 405 410 415  
 Glu Leu Ser Met Cys Phe Thr Glu Leu Thr Thr Asn Ile Ile Pro Gly  
 420 425 430  
 Ser Asn Lys Val Ile Lys Pro Asn Ser Gly Pro Ser Arg Ala Arg Pro  
 435 440 445  
 Ser Ala Ala Leu Thr Val Leu Ser Val Leu Met Leu Lys Gln Ala Leu  
 450 455 460

<210> 113  
 <211> 355  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (133)

<220>  
 <221> unsure  
 <222> (151)

<220>  
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 <222> (196)

<220>  
 <221> unsure  
 <222> (228)

<400> 113  
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 tcttaaggaa acngacgtgc tcttctccgt ntaccagcac tcgggcccgc gagatccagt 180

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cctgaggctt caccntgga acaactgcac gccctcaat cttgaagnga tctcctatgc 240
cgaccccaact ccctccgat ccctcagcag cagccccggg cacctccgag ttctggacat 300
ccccgatag cagcagcagc agcaggacgg gaaagaagcc ccacagagcg gccgc 355
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<210> 114  
 <211> 587  
 <212> DNA  
 <213> Homo sapiens

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<400> 114
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cagtcaatga atatgctgaa ttccaacat gagttgcctg atgtttctga gttcatgaca 180
agactcttct cttcaaaatc atctggcaaa tctagcagcg gcagcagtaa aacaggcaaa 240
agtggggctg gcaaaaggag gtagtcagcg cgtccaragc tggcatttgc acaaacacgg 300
caacactggg tggcatccaa gtcttggaac accgtgtgaa gcaactacta taaacttgag 360
tcatcccgac gttgatctct tacaactgtg tatgttaact ttttagcaca tgtttgtac 420
ttggtacacg agaaaaccca gctttcatct tttgtctgta tgaggtcaat attgatgtca 480
ctgaattaat tacagtgtcc tatagaaaat gccattaata aattatatga actactatac 540
attatgtata ttaattaaaa catcttaatc cagaaaaaaa aaaaaaa 587
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<210> 115  
 <211> 81  
 <212> PRT  
 <213> Homo sapiens

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<400> 115
Met Asn Pro Met Val Met Met Met Val Leu Pro Leu Leu Ile Phe Val
  1             5             10             15

Leu Leu Pro Lys Val Val Asn Thr Ser Asp Pro Asp Met Arg Arg Glu
      20             25             30

Met Glu Gln Ser Met Asn Met Leu Asn Ser Asn His Glu Leu Pro Asp
      35             40             45

Val Ser Glu Phe Met Thr Arg Leu Phe Ser Ser Lys Ser Ser Gly Lys
      50             55             60

Ser Ser Ser Gly Ser Ser Lys Thr Gly Lys Ser Gly Ala Gly Lys Arg
      65             70             75             80
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Arg

<210> 116  
 <211> 601  
 <212> DNA  
 <213> Homo sapiens

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<400> 116
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gcagtacgtg atcggcctgt tctctcgtg cctctacacc atcttctctt tccccatcgg 180
ctttgtgggc aacatcctga tcttggtggt gaacatcagc ttccgcgaga agatgaccat 240
ccccgacctg tacttcatca acctggcggt ggccggacct atcctggttg ccgactccct 300
cattgaggtg ttcaacctgc acgagcggta ctacgacatc gccgtcctgt gcaccttcac 360
gtcgtctctt ctgcagggtc acatgtacag cagcgtcttc ttctcacct ggatgagctt 420
cgaccgctac atcgccctgg ccaggggccat gcgctgcagc ctgttccgca ccaagcacca 480
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cgcccggtg agctgtggcc tcactctggat ggcattcgtg tcagccacgc tgggtgccctt 540  
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 g 601

<210> 117  
 <211> 200  
 <212> PRT  
 <213> Homo sapiens

<400> 117  
 Met Tyr Leu Gly Thr Ala Gln Pro Ala Ala Pro Asn Thr Thr Ser Pro  
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 Glu Leu Asn Leu Ser His Pro Leu Leu Gly Thr Ala Leu Ala Asn Gly  
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 Thr Gly Glu Leu Ser Glu His Gln Gln Tyr Val Ile Gly Leu Phe Leu  
 35 40 45  
 Ser Cys Leu Tyr Thr Ile Phe Leu Phe Pro Ile Gly Phe Val Gly Asn  
 50 55 60  
 Ile Leu Ile Leu Val Val Asn Ile Ser Phe Arg Glu Lys Met Thr Ile  
 65 70 75 80  
 Pro Asp Leu Tyr Phe Ile Asn Leu Ala Val Ala Asp Leu Ile Leu Val  
 85 90 95  
 Ala Asp Ser Leu Ile Glu Val Phe Asn Leu His Glu Arg Tyr Tyr Asp  
 100 105 110  
 Ile Ala Val Leu Cys Thr Phe Met Ser Leu Phe Leu Gln Val Asn Met  
 115 120 125  
 Tyr Ser Ser Val Phe Phe Leu Thr Trp Met Ser Phe Asp Arg Tyr Ile  
 130 135 140  
 Ala Leu Ala Arg Ala Met Arg Cys Ser Leu Phe Arg Thr Lys His His  
 145 150 155 160  
 Ala Arg Leu Ser Cys Gly Leu Ile Trp Met Ala Ser Val Ser Ala Thr  
 165 170 175  
 Leu Val Pro Phe Thr Ala Val His Leu Gln His Thr Asp Glu Ala Cys  
 180 185 190  
 Phe Cys Phe Ala Asp Val Arg Glu  
 195 200

<210> 118  
 <211> 419  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (80)  
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&lt;221&gt; unsure

&lt;222&gt; (178)

&lt;400&gt; 118

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gccgtctgct ccgggggtggg tcagtcactg cttgttgaca tcaacatggc aattgcantc 180
atgtggactg ggaccgtgag agctgccgtg tgggttagtc gggtgccagg acaatgaaat 240
actccagcac gtgtggctga cgaatttgtt ttacagaaa taacagctgg ggacaactgc 300
ggatgatgat taaaaacctt ccataaaat gtaagaaaag ctgatgaggc tggtagcgtt 360
cagcctttgt caataaacct gtcatgtgag gaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 419

```

&lt;210&gt; 119

&lt;211&gt; 714

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens .

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (646)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (649)

&lt;400&gt; 119

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tatctttctg cctcaagtac tggatgtgtt ttatgccaac atgaagaaaa gagaaggagc 180
tcagctttct tccaacagy ctartswtsy ytwmytthy akcatttttg ggcttttcaa 240
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ttcgggtgtg tggtagaaat gtcacgtgtg tgggaatagc tatctcctgg ctacaagacc 360
tgattgaaaa agaacagtgt ccttacacca gtgaagatga gtgcatcaaa gactttgatg 420
aaaaggagta tcaggagtgt aatgagctgc agaagaagt aaatattaac atttccttgg 480
accataagag acctttgatt aaggtttttg gaattagcag agatgtgatg caggctagag 540
atgaaattga ggcatgatc aagagagttc gattggccaa agaacaggaa tcccgggcag 600
attgtatcag tgagtttata gaatggcagt ataatgacaa taacantnt cattgtttta 660
acaaaatgac caatctgaaa ttagaggatg caaggagaga aaaaaaaaaa aaaa 714

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&lt;210&gt; 120

&lt;211&gt; 159

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (141)..(142)

&lt;400&gt; 120

```

Phe Leu Gly Phe Ser Lys Gln Ser Pro Gln Lys Lys Asn His Leu Val
  1             5             10             15

Leu Glu Lys Lys Thr Glu Ser Ala Thr Phe Arg Val Cys Gly Glu Asn
      20             25             30

Val Thr Cys Val Glu Tyr Ala Ile Ser Trp Leu Gln Asp Leu Ile Glu
    35             40             45

Lys Glu Gln Cys Pro Tyr Thr Ser Glu Asp Glu Cys Ile Lys Asp Phe
    50             55             60

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Asp Glu Lys Glu Tyr Gln Glu Leu Asn Glu Leu Gln Lys Lys Leu Asn  
65 70 75 80

Ile Asn Ile Ser Leu Asp His Lys Arg Pro Leu Ile Lys Val Leu Gly  
85 90 95

Ile Ser Arg Asp Val Met Gln Ala Arg Asp Glu Ile Glu Ala Met Ile  
100 105 110

Lys Arg Val Arg Leu Ala Lys Glu Gln Glu Ser Arg Ala Asp Cys Ile  
115 120 125

Ser Glu Phe Ile Glu Trp Gln Tyr Asn Asp Asn Asn Xaa Xaa His Cys  
130 135 140

Phe Asn Lys Met Thr Asn Leu Lys Leu Glu Asp Ala Arg Arg Glu  
145 150 155

<210> 121  
<211> 2681  
<212> DNA  
<213> Homo sapiens

<220>  
<221> unsure  
<222> (2656)

<400> 121  
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catgtgccga cctttctctg ctcttttact ttgcagcacc aaatgcttcc tactttgtgg 180  
tctaggagga acacatgtca cttttgtaag ctgctcgaaa gcaggggcca caccttcac 240  
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tgtattcagc ctggaattgc actaggattt ttgggccaac acattgtatt cttactgat 360  
accagacttc caatcaaata aaatccttaa gcctttttca tagtctttaa ttaactact 420  
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gctgctgtaa gaaagagtcc aaaatgcaaa ggatttacca caatgcagtt aatttttctc 1140  
acaacggtcg aggtaggcag gtggtccaag tccagttaat cagccctcct caacacaagg 1200  
cttccctctg taagctcagg atgaccgctc cagttctcat catctcccag gcagaaaaac 1260  
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gaaggatcac ttgagcacag gagttggagg atacagttag ccatgatcac accacctcac 1560  
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```

&lt;210&gt; 122

&lt;211&gt; 132

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 122

```

Met Glu Ala Val Arg Met Asn Trp Lys Glu Arg Leu Trp Glu Arg Gln
  1                      5                      10                     15

```

```

Arg Asp Glu Asn Lys Pro Gly Leu Ala Leu Pro Cys Ala His Thr Gly
          20                      25                     30

```

```

Glu Leu Cys Ala Pro Gly Cys Val Ser Trp Tyr Met Arg Leu Ser Glu
          35                      40                     45

```

```

Gly Ser Trp Gly Ala Leu Leu Ala Gln Arg Leu Arg Gly Arg Pro Arg
          50                      55                     60

```

```

Lys Pro Phe Phe Ala Leu Val Arg Val Cys Cys Ile Phe Pro Ser Pro
          65                      70                     75                     80

```

```

Gly Asn Gly Thr Gln Phe Phe Phe Phe Leu Cys Lys Ile Ile Ser Ile
          85                      90                     95

```

```

Thr Ile Gly Cys Ala His Glu Asn Ala Phe Cys Phe His Arg Asn Val
          100                     105                    110

```

```

Phe Ser His Ser Val Leu Ile Leu Ile Ser Val Lys Leu Ser Lys His
          115                     120                    125

```

```

Ile Thr Lys Phe
          130

```

&lt;210&gt; 123

&lt;211&gt; 1585

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 123

```

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tactaaggat tgaggaccca aagatgaaca aaacatgggg cctaattcaa agatttcaca 180
atctggagag aaagtcagcc acatacaaaa aattataagg tagaatgtgc tataaaaaat 240

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1585

```

&lt;210&gt; 124

&lt;211&gt; 63

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 124

```

Met Leu Ser Leu Ile Arg Gly Tyr Val Asn Phe Pro Ala Phe Tyr Ser
  1             5             10             15

```

```

Phe Ile Asn Leu Thr Ser Leu Ile Ala Tyr His Val Ser Gly Ser Val
      20             25             30

```

```

Leu Arg Ile Glu Asp Pro Lys Met Asn Lys Thr Trp Gly Leu Ile Gln
      35             40             45

```

```

Arg Phe His Asn Leu Glu Arg Lys Ser Ala Thr Tyr Lys Lys Leu
      50             55             60

```

&lt;210&gt; 125

&lt;211&gt; 625

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 125

```

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625

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<210> 126  
 <211> 24  
 <212> PRT  
 <213> Homo sapiens

<400> 126  
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 Phe Ser Pro Leu Leu Gln Lys Ala  
                           20

<210> 127  
 <211> 1946  
 <212> DNA  
 <213> Homo sapiens

<400> 127  
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 aaaaaaaaaa aaaaaaaaaa aaaaaa 1946

<210> 128  
 <211> 490  
 <212> PRT  
 <213> Homo sapiens

<220>



&lt;221&gt; UNSURE

&lt;222&gt; (83)

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (480)

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (482)

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (490)

&lt;400&gt; 128

Met Lys Pro Lys Leu Met Tyr Gln Glu Leu Lys Val Pro Ala Glu Glu  
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Pro Ala Asn Glu Leu Pro Met Asn Glu Ile Glu Ala Trp Lys Ala Ala  
 20 25 30

Glu Lys Lys Ala Arg Trp Val Leu Leu Val Leu Ile Leu Ala Val Val  
 35 40 45

Gly Phe Gly Ala Leu Met Thr Gln Leu Phe Leu Trp Glu Tyr Gly Asp  
 50 55 60

Leu His Leu Phe Gly Pro Asn Gln Arg Pro Ala Pro Cys Tyr Asp Pro  
 65 70 75 80

Cys Glu Xaa Val Leu Val Glu Ser Ile Pro Glu Gly Leu Asp Phe Pro  
 85 90 95

Asn Ala Ser Thr Gly Asn Pro Ser Thr Ser Gln Ala Trp Leu Gly Leu  
 100 105 110

Leu Ala Gly Ala His Ser Ser Leu Asp Ile Ala Ser Phe Tyr Trp Thr  
 115 120 125

Leu Thr Asn Asn Asp Thr His Thr Gln Glu Pro Ser Ala Gln Gln Gly  
 130 135 140

Glu Glu Val Leu Arg Gln Leu Gln Thr Leu Ala Pro Lys Gly Val Asn  
 145 150 155 160

Val Arg Ile Ala Val Ser Lys Pro Ser Gly Pro Gln Pro Gln Ala Asp  
 165 170 175

Leu Gln Ala Leu Leu Gln Ser Gly Ala Gln Val Arg Met Val Asp Met  
 180 185 190

Gln Lys Leu Thr His Gly Val Leu His Thr Lys Phe Trp Val Val Asp  
 195 200 205

Gln Thr His Phe Tyr Leu Gly Ser Ala Asn Met Asp Trp Arg Ser Leu  
 210 215 220

Thr Gln Val Lys Glu Leu Gly Val Val Met Tyr Asn Cys Ser Cys Leu  
 225 230 235 240

Ala Arg Asp Leu Thr Lys Ile Phe Glu Ala Tyr Trp Phe Leu Gly Gln  
 245 250 255

Ala Gly Ser Ser Ile Pro Ser Thr Trp Pro Arg Phe Tyr Asp Thr Arg  
 260 265 270

Tyr Asn Gln Glu Thr Pro Met Glu Ile Cys Leu Asn Gly Thr Pro Ala  
 275 280 285

Leu Ala Tyr Leu Ala Ser Ala Pro Pro Pro Leu Cys Pro Ser Gly Arg  
 290 295 300

Thr Pro Asp Leu Lys Ala Leu Leu Asn Val Val Asp Asn Ala Arg Ser  
 305 310 315 320

Phe Ile Tyr Val Ala Val Met Asn Tyr Leu Pro Thr Leu Glu Phe Ser  
 325 330 335

His Pro His Arg Phe Trp Pro Ala Ile Asp Asp Gly Leu Arg Arg Ala  
 340 345 350

Thr Tyr Glu Arg Gly Val Lys Val Arg Leu Leu Ile Ser Cys Trp Gly  
 355 360 365

His Ser Glu Pro Ser Met Arg Ala Phe Leu Leu Ser Leu Ala Ala Leu  
 370 375 380

Arg Asp Asn His Thr His Ser Asp Ile Gln Val Lys Leu Phe Val Val  
 385 390 395 400

Pro Ala Asp Glu Ala Gln Ala Arg Ile Pro Tyr Ala Arg Val Asn His  
 405 410 415

Asn Lys Tyr Met Val Thr Glu Arg Ala Thr Tyr Ile Gly Thr Ser Asn  
 420 425 430

Trp Ser Gly Asn Tyr Phe Thr Glu Thr Ala Gly Thr Ser Leu Leu Val  
 435 440 445

Thr Gln Asn Gly Arg Gly Gly Leu Arg Ser Gln Leu Glu Ala Ile Phe  
 450 455 460

Leu Arg Asp Trp Asp Ser Pro Tyr Ser His Asp Leu Asp Thr Ser Xaa  
 465 470 475 480

Asp Xaa Val Gly Asn Ala Cys Arg Leu Xaa  
 485 490

<210> 129  
 <211> 6254  
 <212> DNA  
 <213> Homo sapiens

<400> 129  
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 aggtgtctag ccagtgagac cttctgaaga gcaatgctaa gaagacgttt ggtttaaaga 240

attaaaagga agaacaactt aagagcttct tcaaagttcc ccgcatgaaa attacttaaa 300  
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&lt;210&gt; 130

&lt;211&gt; 1192

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 130

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Val Pro Leu Ile Leu Phe Leu Cys Gln Met Ile Ser Ala Leu Glu Val
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Pro Leu Asp Pro Lys Leu Leu Glu Asp Leu Val Gln Pro Pro Thr Ile
      35                      40                      45

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Thr Gln Gln Ser Pro Lys Asp Tyr Ile Ile Asp Pro Arg Glu Asn Ile
      50                      55                      60

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 180 185 190  
 Arg Val Ser Gln Gly Leu Asn Gly Asp Leu Tyr Phe Ser Asn Val Leu  
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 Pro Glu Asp Thr Arg Glu Asp Tyr Ile Cys Tyr Ala Arg Phe Asn His  
 210 215 220  
 Thr Gln Thr Ile Gln Gln Lys Gln Pro Ile Ser Val Lys Val Ile Ser  
 225 230 235 240  
 Ala Lys Ser Ser Arg Glu Arg Pro Pro Thr Phe Leu Thr Pro Glu Gly  
 245 250 255  
 Asn Ala Ser Asn Lys Glu Glu Leu Arg Gly Asn Val Leu Ser Leu Glu  
 260 265 270  
 Cys Ile Ala Glu Gly Leu Pro Thr Pro Ile Ile Tyr Trp Ala Lys Glu  
 275 280 285  
 Asp Gly Met Leu Pro Lys Asn Arg Thr Val Tyr Lys Asn Phe Glu Lys  
 290 295 300  
 Thr Leu Gln Ile Ile His Val Ser Glu Ala Asp Ser Gly Asn Tyr Gln  
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 Cys Ile Ala Lys Asn Ala Leu Gly Ala Ile His His Thr Ile Ser Val  
 325 330 335  
 Arg Val Lys Ala Ala Pro Tyr Trp Ile Thr Ala Pro Gln Asn Leu Val  
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 355 360 365  
 Pro Lys Pro Arg Ile Ser Trp Leu Thr Asn Gly Val Pro Ile Glu Ile  
 370 375 380

Ala Pro Asp Asp Pro Ser Arg Lys Ile Asp Gly Asp Thr Ile Ile Phe  
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 420 425 430  
 Glu Pro Pro Arg Ile Leu Thr Pro Ala Asn Thr Leu Tyr Gln Val Ile  
 435 440 445  
 Ala Asn Arg Pro Ala Leu Leu Asp Cys Ala Phe Phe Gly Ser Pro Leu  
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 Pro Thr Ile Glu Trp Phe Lys Gly Ala Lys Gly Ser Ala Leu His Glu  
 465 470 475 480  
 Asp Ile Tyr Val Leu His Glu Asn Gly Thr Leu Glu Ile Pro Val Ala  
 485 490 495  
 Gln Lys Asp Ser Thr Gly Thr Tyr Thr Cys Val Ala Arg Asn Lys Leu  
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 Gly Met Ala Lys Asn Glu Val His Leu Glu Ile Lys Asp Ala Thr Trp  
 515 520 525  
 Ile Val Lys Gln Pro Glu Tyr Ala Val Val Gln Arg Gly Ser Met Val  
 530 535 540  
 Ser Phe Glu Cys Lys Val Lys His Asp His Thr Leu Ser Leu Thr Val  
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 Leu Trp Leu Lys Asp Asn Arg Glu Leu Pro Ser Asp Glu Arg Phe Thr  
 565 570 575  
 Val Asp Lys Asp His Leu Val Val Ala Asp Val Ser Asp Asp Asp Ser  
 580 585 590  
 Gly Thr Tyr Thr Cys Val Ala Asn Thr Thr Leu Asp Ser Val Ser Ala  
 595 600 605  
 Ser Ala Val Leu Ser Val Val Ala Pro Thr Pro Thr Pro Ala Pro Val  
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 Tyr Asp Val Pro Asn Pro Pro Phe Asp Leu Glu Leu Thr Asp Gln Leu  
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 Asp Lys Ser Val Gln Leu Ser Trp Thr Pro Gly Asp Asp Asn Asn Ser  
 645 650 655  
 Pro Ile Thr Lys Phe Ile Ile Glu Tyr Glu Asp Ala Met His Lys Pro  
 660 665 670  
 Gly Leu Trp His His Gln Thr Glu Val Ser Gly Thr Gln Thr Thr Ala  
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 Gln Leu Lys Leu Ser Pro Tyr Val Asn Tyr Ser Phe Arg Val Met Ala  
 690 695 700

|     |      |     |     |     |     |      |     |     |     |     |      |      |     |     |     |  |  |  |  |
|-----|------|-----|-----|-----|-----|------|-----|-----|-----|-----|------|------|-----|-----|-----|--|--|--|--|
| Val | Asn  | Ser | Ile | Gly | Lys | Ser  | Leu | Pro | Ser | Glu | Ala  | Ser  | Glu | Gln | Tyr |  |  |  |  |
| 705 |      |     |     |     | 710 |      |     |     |     | 715 |      |      |     |     | 720 |  |  |  |  |
| Leu | Thr  | Lys | Ala | Ser | Glu | Pro  | Asp | Lys | Asn | Pro | Thr  | Ala  | Val | Glu | Gly |  |  |  |  |
|     |      |     |     | 725 |     |      |     |     | 730 |     |      |      |     |     | 735 |  |  |  |  |
| Leu | Gly  | Ser | Glu | Pro | Asp | Asn  | Leu | Val | Ile | Thr | Trp  | Lys  | Pro | Leu | Asn |  |  |  |  |
|     |      |     | 740 |     |     |      |     | 745 |     |     |      |      |     | 750 |     |  |  |  |  |
| Gly | Phe  | Glu | Ser | Asn | Gly | Pro  | Gly | Leu | Gln | Tyr | Lys  | Val  | Ser | Trp | Arg |  |  |  |  |
|     |      | 755 |     |     |     |      | 760 |     |     |     |      | 765  |     |     |     |  |  |  |  |
| Gln | Lys  | Asp | Gly | Asp | Asp | Glu  | Trp | Thr | Ser | Val | Val  | Val  | Ala | Asn | Val |  |  |  |  |
|     | 770  |     |     |     |     | 775  |     |     |     |     |      | 780  |     |     |     |  |  |  |  |
| Ser | Lys  | Tyr | Ile | Val | Ser | Gly  | Thr | Pro | Thr | Phe | Val  | Pro  | Tyr | Leu | Ile |  |  |  |  |
| 785 |      |     |     |     | 790 |      |     |     |     | 795 |      |      |     |     | 800 |  |  |  |  |
| Lys | Val  | Gln | Ala | Leu | Asn | Asp  | Met | Gly | Phe | Ala | Pro  | Glu  | Pro | Ala | Val |  |  |  |  |
|     |      |     |     | 805 |     |      |     |     | 810 |     |      |      |     |     | 815 |  |  |  |  |
| Val | Met  | Gly | His | Ser | Gly | Glu  | Asp | Leu | Pro | Met | Val  | Ala  | Pro | Gly | Asn |  |  |  |  |
|     |      |     | 820 |     |     |      |     | 825 |     |     |      |      |     | 830 |     |  |  |  |  |
| Val | Arg  | Val | Asn | Val | Val | Asn  | Ser | Thr | Leu | Ala | Glu  | Val  | His | Trp | Asp |  |  |  |  |
|     |      | 835 |     |     |     |      |     | 840 |     |     |      |      | 845 |     |     |  |  |  |  |
| Pro | Val  | Pro | Leu | Lys | Ser | Ile  | Arg | Gly | His | Leu | Gln  | Gly  | Tyr | Arg | Ile |  |  |  |  |
|     | 850  |     |     |     |     | 855  |     |     |     |     | 860  |      |     |     |     |  |  |  |  |
| Tyr | Tyr  | Trp | Lys | Thr | Gln | Ser  | Ser | Ser | Lys | Arg | Asn  | Arg  | Arg | His | Ile |  |  |  |  |
| 865 |      |     |     |     | 870 |      |     |     |     | 875 |      |      |     |     | 880 |  |  |  |  |
| Glu | Lys  | Lys | Ile | Leu | Thr | Phe  | Gln | Gly | Ser | Lys | Thr  | His  | Gly | Met | Leu |  |  |  |  |
|     |      |     | 885 |     |     |      |     |     | 890 |     |      |      |     | 895 |     |  |  |  |  |
| Pro | Gly  | Leu | Glu | Pro | Phe | Ser  | His | Tyr | Thr | Leu | Asn  | Val  | Arg | Val | Val |  |  |  |  |
|     |      | 900 |     |     |     |      |     | 905 |     |     |      |      | 910 |     |     |  |  |  |  |
| Asn | Gly  | Lys | Gly | Glu | Gly | Pro  | Ala | Ser | Pro | Asp | Arg  | Val  | Phe | Asn | Thr |  |  |  |  |
|     |      | 915 |     |     |     |      | 920 |     |     |     |      |      | 925 |     |     |  |  |  |  |
| Pro | Glu  | Gly | Val | Pro | Ser | Ala  | Pro | Ser | Ser | Leu | Lys  | Ile  | Val | Asn | Pro |  |  |  |  |
|     | 930  |     |     |     |     | 935  |     |     |     |     | 940  |      |     |     |     |  |  |  |  |
| Thr | Leu  | Asp | Ser | Leu | Thr | Leu  | Glu | Trp | Asp | Pro | Pro  | Ser  | His | Pro | Asn |  |  |  |  |
| 945 |      |     |     |     | 950 |      |     |     |     | 955 |      |      |     |     | 960 |  |  |  |  |
| Gly | Ile  | Leu | Thr | Glu | Tyr | Thr  | Leu | Lys | Tyr | Gln | Pro  | Ile  | Asn | Ser | Thr |  |  |  |  |
|     |      |     | 965 |     |     |      |     |     | 970 |     |      |      |     | 975 |     |  |  |  |  |
| His | Glu  | Leu | Gly | Pro | Leu | Val  | Asp | Leu | Lys | Ile | Pro  | Ala  | Asn | Lys | Thr |  |  |  |  |
|     |      | 980 |     |     |     |      |     | 985 |     |     |      |      | 990 |     |     |  |  |  |  |
| Arg | Trp  | Thr | Leu | Lys | Asn | Leu  | Asn | Phe | Ser | Thr | Arg  | Tyr  | Lys | Phe | Tyr |  |  |  |  |
|     |      | 995 |     |     |     | 1000 |     |     |     |     |      | 1005 |     |     |     |  |  |  |  |
| Phe | Tyr  | Ala | Gln | Thr | Ser | Ala  | Gly | Ser | Gly | Ser | Gln  | Ile  | Thr | Glu | Glu |  |  |  |  |
|     | 1010 |     |     |     |     | 1015 |     |     |     |     | 1020 |      |     |     |     |  |  |  |  |

Ala Val Thr Thr Val Asp Glu Ala Gly Ile Leu Pro Pro Asp Val Gly  
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Trp Phe Ile Gly Leu Met Cys Ala Val Ala Leu Leu Ile Leu Ile Leu  
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Leu Ile Val Cys Phe Ile Arg Arg Asn Lys Gly Gly Lys Tyr Pro Val  
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Lys Glu Lys Glu Asp Ala His Ala Asp Pro Glu Ile Gln Pro Met Lys  
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Glu Asp Asp Gly Thr Phe Gly Glu Tyr Ser Asp Ala Glu Asp His Lys  
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Pro Leu Lys Lys Gly Ser Arg Thr Pro Ser Asp Arg Thr Val Lys Lys  
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Glu Asp Ser Asp Asp Ser Leu Val Asp Tyr Gly Glu Gly Val Asn Gly  
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Gln Phe Asn Glu Asp Gly Ser Phe Ile Gly Gln Tyr Ser Gly Lys Lys  
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&lt;210&gt; 132

&lt;211&gt; 479

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (13)..(14)

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (21)

&lt;400&gt; 132

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Pro Met Val Gly His Arg Ala Ser Gln Thr Gln Thr Ala Pro Val Glu  
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Glu Ser Asp Phe Asp Thr Met Pro Asp Ile Glu Ser Asp Lys Asn Ile  
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Ile Arg Thr Lys Met Phe Leu Tyr Leu Ser Asp Leu Ser Arg Lys Asp  
 65 70 75 80

Arg Arg Ile Val Ser Lys Lys Tyr Lys Ile Tyr Phe Trp Asn Ile Ile  
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Thr Ile Ala Val Phe Tyr Ala Leu Pro Val Ile Gln Leu Val Ile Thr  
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Tyr Gln Thr Val Val Asn Val Thr Gly Asn Gln Asp Ile Cys Tyr Tyr  
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Asn Phe Leu Cys Ala His Pro Leu Gly Val Leu Ser Ala Phe Asn Asn  
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Ile Leu Ser Asn Leu Gly His Val Leu Leu Gly Phe Leu Phe Leu Leu  
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Ile Val Leu Arg Arg Asp Ile Leu His Arg Arg Ala Leu Glu Ala Lys  
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Asp Ile Phe Ala Val Glu Tyr Gly Ile Pro Lys His Phe Gly Leu Phe  
 180 185 190

Tyr Ala Met Gly Ile Ala Leu Met Met Glu Gly Val Leu Ser Ala Cys  
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Tyr His Val Cys Pro Asn Tyr Ser Asn Phe Gln Phe Asp Thr Ser Phe  
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Met Tyr Met Ile Ala Gly Leu Cys Met Leu Lys Leu Tyr Gln Thr Arg  
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His Pro Asp Ile Asn Ala Ser Ala Tyr Ser Ala Tyr Ala Ser Phe Ala  
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Val Val Ile Met Val Thr Val Leu Gly Val Val Phe Gly Lys Asn Asp  
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Ala Leu Ser Thr Gln Ile Tyr Tyr Met Gly Arg Phe Lys Ile Asp Val  
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Gly Leu Ile Tyr Arg Pro Arg Asp Phe Ala Ser Tyr Met Leu Gly Ile  
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Phe Ile Cys Asn Leu Leu Leu Tyr Leu Ala Phe Tyr Ile Ile Met Lys  
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Leu Arg Ser Ser Glu Lys Val Leu Pro Val Pro Leu Phe Cys Ile Val  
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Glu Cys Ile Leu Leu Asp Phe Phe Asp Asp His Asp Ile Trp His Phe  
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 <213> Homo sapiens

<400> 134  
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20 25 30

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35 40 45

Asn Asn Ser Ile Ser Ser Asn Gly Ser His Leu Gly Thr Lys Gln Gln  
50 55 60

Val Phe Gln Gly Thr Asn Ser Leu Gly Leu Lys Ser Ser Gln Ser Val  
65 70 75 80

Gln Ser Ile Arg Pro Pro Tyr Asn Arg Ala Val Ser Leu Asp Ser Pro  
85 90 95

Val Ser Val Gly Ser Ser Pro Pro Val Lys Asn Ile Ser Ala Phe Pro  
100 105 110

Met Leu Pro Lys Gln Pro Met Leu Gly Gly Asn Pro Arg Met Met Asp  
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130 135 140

Ser Lys Ala  
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<400> 135  
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&lt;210&gt; 137

&lt;211&gt; 547

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 137

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Met Ala Ala Val Ser Leu Arg Leu Gly Asp Leu Val Trp Gly Lys Leu
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Gly Arg Tyr Pro Pro Trp Pro Gly Lys Ile Val Asn Pro Pro Lys Asp
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Leu Lys Lys Pro Arg Gly Lys Lys Cys Phe Phe Val Lys Phe Phe Gly
  35              40             45

```

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Thr Glu Asp His Ala Trp Ile Lys Val Glu Gln Leu Lys Pro Tyr His
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```

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Ala His Lys Glu Glu Met Ile Lys Ile Asn Lys Gly Lys Arg Phe Gln

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|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 65  |     | 70  |     | 75  |     | 80  |     |     |     |     |     |     |     |     |     |
| Gln | Ala | Val | Asp | Ala | Val | Glu | Glu | Phe | Leu | Arg | Arg | Ala | Lys | Gly | Lys |
|     |     |     |     | 85  |     |     |     |     | 90  |     |     |     |     | 95  |     |
| Asp | Gln | Thr | Ser | Ser | His | Asn | Ser | Ser | Asp | Asp | Lys | Asn | Arg | Arg | Asn |
|     |     |     | 100 |     |     |     |     | 105 |     |     |     |     | 110 |     |     |
| Ser | Ser | Glu | Glu | Arg | Ser | Arg | Pro | Asn | Ser | Gly | Asp | Glu | Lys | Arg | Lys |
|     |     | 115 |     |     |     |     | 120 |     |     |     |     | 125 |     |     |     |
| Leu | Ser | Leu | Ser | Glu | Gly | Lys | Val | Lys | Lys | Asn | Met | Gly | Glu | Gly | Lys |
|     | 130 |     |     |     |     | 135 |     |     |     |     | 140 |     |     |     |     |
| Lys | Arg | Val | Ser | Ser | Gly | Ser | Ser | Glu | Arg | Gly | Ser | Lys | Ser | Pro | Leu |
| 145 |     |     |     |     | 150 |     |     |     |     | 155 |     |     |     |     | 160 |
| Lys | Arg | Ala | Gln | Glu | Gln | Ser | Pro | Arg | Lys | Arg | Gly | Arg | Pro | Pro | Lys |
|     |     |     |     | 165 |     |     |     |     | 170 |     |     |     |     | 175 |     |
| Asp | Glu | Lys | Asp | Leu | Thr | Ile | Pro | Glu | Ser | Ser | Thr | Val | Lys | Gly | Met |
|     |     |     | 180 |     |     |     |     | 185 |     |     |     |     | 190 |     |     |
| Met | Ala | Gly | Pro | Met | Ala | Ala | Phe | Lys | Trp | Gln | Pro | Thr | Ala | Ser | Glu |
|     |     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |
| Pro | Val | Lys | Asp | Ala | Asp | Pro | His | Phe | His | His | Phe | Leu | Leu | Ser | Gln |
|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Thr | Glu | Lys | Pro | Ala | Val | Cys | Tyr | Gln | Ala | Ile | Thr | Lys | Lys | Leu | Lys |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Ile | Cys | Glu | Glu | Glu | Thr | Gly | Ser | Thr | Ser | Ile | Gln | Ala | Ala | Asp | Ser |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
| Thr | Ala | Val | Asn | Gly | Ser | Ile | Thr | Pro | Thr | Asp | Lys | Lys | Ile | Gly | Phe |
|     |     |     | 260 |     |     |     |     | 265 |     |     |     |     | 270 |     |     |
| Leu | Gly | Leu | Gly | Leu | Met | Gly | Ser | Gly | Ile | Val | Ser | Asn | Leu | Leu | Lys |
|     | 275 |     |     |     |     | 280 |     |     |     |     |     | 285 |     |     |     |
| Met | Gly | His | Thr | Val | Thr | Val | Trp | Asn | Arg | Thr | Ala | Glu | Lys | Glu | Gly |
|     | 290 |     |     |     |     | 295 |     |     |     |     | 300 |     |     |     |     |
| Ala | Arg | Leu | Gly | Arg | Thr | Pro | Ala | Glu | Val | Val | Ser | Thr | Cys | Asp | Ile |
| 305 |     |     |     |     | 310 |     |     |     |     | 315 |     |     |     |     | 320 |
| Thr | Phe | Ala | Cys | Val | Ser | Asp | Pro | Lys | Ala | Ala | Lys | Asp | Leu | Val | Leu |
|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
| Gly | Pro | Ser | Gly | Val | Leu | Gln | Gly | Ile | Arg | Pro | Gly | Lys | Cys | Tyr | Val |
|     |     |     | 340 |     |     |     |     | 345 |     |     |     |     | 350 |     |     |
| Asp | Met | Ser | Thr | Val | Asp | Ala | Asp | Thr | Val | Thr | Glu | Leu | Ala | Gln | Val |
|     |     | 355 |     |     |     |     | 360 |     |     |     |     | 365 |     |     |     |
| Ile | Val | Ser | Arg | Gly | Gly | Arg | Phe | Leu | Glu | Ala | Pro | Val | Ser | Gly | Asn |
|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
| Gln | Gln | Leu | Ser | Asn | Asp | Gly | Met | Leu | Val | Ile | Leu | Ala | Ala | Gly | Asp |

385                      390                      395                      400  
 Arg Gly Leu Tyr Glu Asp Cys Ser Ser Cys Phe Gln Ala Met Gly Lys  
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 Thr Ser Phe Phe Leu Gly Glu Val Gly Asn Ala Ala Lys Met Met Leu  
                             420                      425                      430  
 Ile Val Asn Met Val Gln Gly Ser Phe Met Ala Thr Ile Ala Glu Gly  
                             435                      440                      445  
 Leu Thr Leu Ala Gln Val Thr Gly Gln Ser Gln Gln Thr Leu Leu Asp  
                             450                      455                      460  
 Ile Leu Asn Gln Gly Gln Leu Ala Ser Ile Phe Leu Asp Gln Lys Cys  
                             465                      470                      475                      480  
 Gln Asn Ile Leu Gln Gly Asn Phe Lys Pro Asp Phe Tyr Leu Lys Tyr  
                             485                      490                      495  
 Ile Gln Lys Asp Leu Arg Leu Ala Ile Ala Leu Gly Asp Ala Val Asn  
                             500                      505                      510  
 His Pro Thr Pro Met Ala Ala Ala Ala Asn Glu Val Tyr Lys Arg Ala  
                             515                      520                      525  
 Lys Ala Leu Asp Gln Ser Asp Asn Asp Met Ser Ala Val Tyr Arg Ala  
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 Tyr Ile His  
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 <212> DNA  
 <213> Homo sapiens

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<210> 139

&lt;211&gt; 232

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 139

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Thr Asn Ala Ser Phe Thr Leu Gly His Gly Phe Gln Phe Val Ser Leu  
 20 25 30

Ser Ser Pro Leu His Asn His Thr Leu Phe Pro Glu Lys Gln Ile Tyr  
 35 40 45

Thr Thr Ser Pro Leu Glu Cys Gly Phe Gly Gln Ser Val Thr Ser Val  
 50 55 60

Leu Pro Ser Ser Leu Pro Lys Pro Pro Phe Gly Met Leu Phe Gly Ser  
 65 70 75 80

Gln Pro Gly Leu Tyr Leu Ser Ala Leu Asp Ala Thr His Gln Gln Leu  
 85 90 95

Thr Pro Ser Gln Glu Leu Asp Asp Leu Ile Asp Ser Gln Lys Asn Leu  
 100 105 110

Glu Thr Ser Ser Ala Phe Gln Ser Ser Ser Gln Lys Leu Thr Ser Gln  
 115 120 125

Lys Glu Gln Lys Asn Leu Glu Ser Ser Thr Gly Phe Gln Ile Pro Ser  
 130 135 140

Gln Glu Leu Ala Ser Gln Ile Asp Pro Gln Lys Asp Ile Glu Pro Arg  
 145 150 155 160

Thr Thr Tyr Gln Ile Glu Asn Phe Ala Gln Ala Phe Gly Ser Gln Phe  
 165 170 175

Lys Ser Gly Ser Arg Val Pro Met Thr Phe Ile Thr Asn Ser Asn Gly  
 180 185 190

Glu Val Asp His Arg Val Arg Thr Ser Val Ser Asp Phe Ser Gly Tyr  
 195 200 205

Thr Asn Met Met Ser Asp Val Ser Glu Pro Cys Ser Thr Arg Val Lys  
 210 215 220

Thr Pro Thr Ser Gln Ser Tyr Arg  
 225 230

&lt;210&gt; 140

&lt;211&gt; 775

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 140

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&lt;210&gt; 141

&lt;211&gt; 44

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 141

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Met Thr Asn Leu Asn Tyr Gly Ser Cys Pro Gln Tyr Lys Ile Leu Lys
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Lys His Tyr Ile Val Ile Ile Ser Tyr Leu Val Val Arg Leu Val Ala
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Ser Pro His Gln Arg His Leu Met Ile Tyr Leu Leu
                35                      40

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&lt;210&gt; 142

&lt;211&gt; 2060

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 142

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 <211> 62  
 <212> PRT  
 <213> Homo sapiens

<400> 143  
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 Ile Pro Leu Gln Lys Leu Leu Met Cys Tyr Phe Cys Cys Leu Val Met  
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 Gln Ala Ala Leu Gly Pro Trp Val Thr Leu Pro Arg Leu Leu  
 50 55 60

<210> 144  
 <211> 1160  
 <212> DNA  
 <213> Homo sapiens

<400> 144  
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 cctcagcctc ccaagtagct gggattacag ccctgaaaac cactcgcttg cagagcgctg 180  
 gatcagcaat gcctactagt tcttcattca aacaccggat taaagagcag gaagactaca 240  
 tccgagattg gactgctcat cgagaagaga tagccaggat cagccaagat cttgctctca 300  
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 acatagaaag caaattaaga gccgaaagtg aagtccctat tgtgaaaacc tcgagcatgg 780  
 agatttcttc tatcttacag gaactgaaaa gagtagaaaa gcagctacaa gcaatcaatg 840  
 ctatgattga tcctgatgga actttggagg ctctgaacaa catgggattt cccagtgcga 900  
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 aaaaaaaaaa aaaaaaaaaa 1160

<210> 145  
 <211> 309  
 <212> PRT  
 <213> Homo sapiens

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (152)

&lt;400&gt; 145

```

Met Pro Thr Ser Ser Ser Phe Lys His Arg Ile Lys Glu Gln Glu Asp
  1             5             10             15

Tyr Ile Arg Asp Trp Thr Ala His Arg Glu Glu Ile Ala Arg Ile Ser
      20             25             30

Gln Asp Leu Ala Leu Ile Ala Arg Glu Ile Asn Asp Val Ala Gly Glu
  35             40             45

Ile Asp Ser Val Thr Ser Ser Gly Thr Ala Pro Ser Thr Thr Val Ser
  50             55             60

Thr Ala Ala Thr Thr Pro Gly Ser Ala Ile Asp Thr Arg Glu Glu Leu
  65             70             75             80

Val Asp Arg Val Phe Asp Glu Ser Leu Asn Phe Gln Lys Ile Pro Pro
      85             90             95

Leu Val His Ser Lys Thr Pro Glu Gly Asn Asn Gly Arg Ser Gly Asp
      100             105             110

Pro Arg Pro Gln Ala Ala Glu Pro Pro Asp His Leu Thr Ile Thr Arg
      115             120             125

Arg Arg Thr Trp Ser Arg Asp Glu Val Met Gly Asp Asn Leu Leu Leu
      130             135             140

Ser Ser Val Phe Gln Phe Ser Xaa Lys Ile Arg Gln Ser Ile Asp Lys
      145             150             155             160

Thr Ala Gly Lys Ile Arg Ile Leu Phe Lys Asp Lys Asp Arg Asn Trp
      165             170             175

Asp Asp Ile Glu Ser Lys Leu Arg Ala Glu Ser Glu Val Pro Ile Val
      180             185             190

Lys Thr Ser Ser Met Glu Ile Ser Ser Ile Leu Gln Glu Leu Lys Arg
      195             200             205

Val Glu Lys Gln Leu Gln Ala Ile Asn Ala Met Ile Asp Pro Asp Gly
      210             215             220

Thr Leu Glu Ala Leu Asn Asn Met Gly Phe Pro Ser Ala Met Leu Pro
      225             230             235             240

Ser Pro Pro Lys Gln Lys Ser Ser Pro Val Asn Asn His His Ser Pro
      245             250             255

Gly Gln Thr Pro Thr Leu Gly Gln Pro Glu Ala Arg Ala Leu His Pro
      260             265             270

Ala Ala Val Ser Ala Ala Ala Glu Phe Glu Asn Ala Glu Ser Glu Ala
      275             280             285

Asp Phe Ser Ile His Phe Asn Arg Val Asn Pro Asp Gly Glu Glu Glu

```

290

295

300

Asp Val Thr Val Thr

305

&lt;210&gt; 146

&lt;211&gt; 1536

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (317)

&lt;400&gt; 146

```

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ctgtcctcta ttctgcacac ggcataattg ggaacgagaa acaaaagttt tcccaaatga 120
agagaactca cttgtttatt gtggggattt attttctgtc ctcttgagg gcagaagagg 180
ggcttaattt cccacatat gatgggaagg accgagtggg aagtctttcc gagaagaact 240
tcaagcagg tttaaagaaa tatgacttgc tttgcctcta ctaccatgag cgggtgtctt 300
cagataagg cagcnaaaa cagttccaac tgaaagaaat cgtgcttgag cttgtggccc 360
acgtccttga acataaagct ataggctttg tgatgggtga tgccaagaaa gaagccaagc 420
ttgccaagaa actgggtttt gatgaagaag gaagcctgta tattcttaag ggtgatcgca 480
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accagtaaaa gtttathtag gaaaaaaaa aaaaaa 1536

```

&lt;210&gt; 147

&lt;211&gt; 268

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (67)

&lt;400&gt; 147

```

Met Lys Arg Thr His Leu Phe Ile Val Gly Ile Tyr Phe Leu Ser Ser
  1             5             10             15

```

```

Cys Arg Ala Glu Gly Leu Asn Phe Pro Thr Tyr Asp Gly Lys Asp
          20             25             30

```

```

Arg Val Val Ser Leu Ser Glu Lys Asn Phe Lys Gln Val Leu Lys Lys

```

|   |     |             |
|---|-----|-------------|
| 35  | 40  | 45          |
| Tyr Asp Leu Leu Cys Leu Tyr Tyr His Glu Pro Val Ser Ser Asp Lys |     |             |
| 50  | 55  | 60          |
| Val Thr Xaa Lys Gln Phe Gln Leu Lys Glu Ile Val Leu Glu Leu Val |     |             |
| 65  | 70  | 75 80       |
| Ala His Val Leu Glu His Lys Ala Ile Gly Phe Val Met Val Asp Ala |     |             |
|   | 85  | 90 95       |
| Lys Lys Glu Ala Lys Leu Ala Lys Lys Leu Gly Phe Asp Glu Glu Gly |     |             |
|   | 100 | 105 110     |
| Ser Leu Tyr Ile Leu Lys Gly Asp Arg Thr Ile Glu Phe Asp Gly Glu |     |             |
|   | 115 | 120 125     |
| Phe Ala Ala Asp Val Leu Val Glu Phe Leu Leu Asp Leu Ile Glu Asp |     |             |
|   | 130 | 135 140     |
| Pro Val Glu Ile Ile Ser Ser Lys Leu Glu Val Gln Ala Phe Glu Arg |     |             |
|   | 145 | 150 155 160 |
| Ile Glu Asp Tyr Ile Lys Leu Ile Gly Phe Phe Lys Ser Glu Asp Ser |     |             |
|   | 165 | 170 175     |
| Glu Tyr Tyr Lys Ala Phe Glu Glu Ala Ala Glu His Phe Gln Pro Tyr |     |             |
|   | 180 | 185 190     |
| Ile Lys Phe Phe Ala Thr Phe Asp Lys Gly Val Ala Lys Lys Leu Ser |     |             |
|   | 195 | 200 205     |
| Leu Lys Met Asn Glu Val Asp Phe Tyr Glu Pro Phe Met Asp Glu Pro |     |             |
|   | 210 | 215 220     |
| Ile Ala Ile Pro Asn Lys Pro Tyr Thr Glu Glu Glu Leu Val Glu Phe |     |             |
|   | 225 | 230 235 240 |
| Val Lys Glu His Gln Arg Cys Leu Arg Trp His Val Gly Ala Gly Gly |     |             |
|   | 245 | 250 255     |
| Leu Gly Ser Gly Glu Trp Arg Gly Ala Ser Leu Cys                 |     |             |
|   | 260 | 265         |

&lt;210&gt; 148

&lt;211&gt; 1009

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 148

```

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aacttgacag gaagtcaact tcaagcagat tgacttgaaa cgggatctca tttagggaagc 120
ataagtgtcc aatcaaaaac tgtgtatttt tttaaatttg gaaaatactc aagttccagt 180
tgcttatcat tctccttcac tttctgaaaa cctggcaatc ccatgtggac ttctggtaga 240
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ttcgttcttg aagagtacac tgggaccgac cctttgtatg tcggcaaggt aagaaatgcc 480
aagtagaaat gaccggggtg gtggatattg aaattgaata tgaattgagt atcaaagttg 540

```

```

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gtccatgtct ctggtatgaa tgggaaaaag tgggaattgg gatttggagg aaaaggctca 720
gacctgcaa gagctattca agtcctaaaa gaggcagcag cagctgtctg ggaatgacag 780
aatgggggag agggaaaactt ggaaatacaa gaagagtaca gagttttttg ctttgtgttt 840
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aaaataaaaa taaaacattt ttcatttcag aagatcttag catgtgcttt aggatagttg 960
gagacaataa atatatttat aaatgttaaa aaaaaaaaaa aaaaaaaaaa 1009

```

&lt;210&gt; 149

&lt;211&gt; 87

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (59)

&lt;400&gt; 149

```

Met Trp Thr Ser Gly Arg Met Ser Asn Ala Lys Asn Trp Leu Gly Leu
  1                      5                      10                      15

```

```

Gly Met Ser Leu Tyr Phe Trp Gly Leu Met Asp Leu Thr Thr Thr Val
                20                      25                      30

```

```

Leu Ser Asp Thr Pro Thr Pro Gln Gly Glu Leu Glu Ala Leu Leu Ser
    35                      40                      45

```

```

Asp Lys Pro Gln Ser His Gln Arg Thr Lys Xaa Ser Trp Val Trp Asn
    50                      55                      60

```

```

Gln Phe Phe Val Leu Glu Glu Tyr Thr Gly Thr Asp Pro Leu Tyr Val
    65                      70                      75                      80

```

```

Gly Lys Val Arg Asn Ala Lys
                85

```

&lt;210&gt; 150

&lt;211&gt; 2546

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 150

```

aaaagaaacc aaggaaattht gtatgataag gcaggtaaag tgaggaaaca tgcaactgaa 60
caggaaaaaa ctgaagaggg attagggcctt aatataaaaa gcattgtcac catgttgatg 120
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agatttggag aaatgcagct ggattttcgt acacccccag gttttgaccg aacacgtaat 720
gctgagattg gaaataagga cattaaattc aaacatttgg aagaagcctt tacatcagaa 780
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```

```

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tttgaaaaaa aaaaaaaaaa aaaaaa 2546

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&lt;210&gt; 151

&lt;211&gt; 286

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 151

```

Met Leu Met Leu Met Leu Met Met Phe Ala Val His Cys Thr Trp
 1             5             10             15

Val Thr Ser Asn Ala Tyr Ser Ser Pro Ser Val Val Leu Ala Ser Tyr
      20             25             30

Asn His Asp Gly Thr Arg Asn Ile Leu Asp Asp Phe Arg Glu Ala Tyr
      35             40             45

Phe Trp Leu Arg Gln Asn Thr Asp Glu His Ala Arg Val Met Ser Trp
      50             55             60

Trp Asp Tyr Gly Tyr Gln Ile Ala Gly Met Ala Asn Arg Thr Thr Leu
      65             70             75             80

Val Asp Asn Asn Thr Trp Asn Asn Ser His Ile Ala Leu Val Gly Lys
      85             90             95

Ala Met Ser Ser Asn Glu Thr Ala Ala Tyr Lys Ile Met Arg Thr Leu
      100            105            110

Asp Val Asp Tyr Val Leu Val Ile Phe Gly Gly Val Ile Gly Tyr Ser
      115            120            125

Gly Asp Asp Ile Asn Lys Phe Leu Trp Met Val Arg Ile Ala Glu Gly
      130            135            140

```

Glu His Pro Lys Asp Ile Arg Glu Ser Asp Tyr Phe Thr Pro Gln Gly  
145 150 155 160

Glu Phe Arg Val Asp Lys Ala Gly Ser Pro Thr Leu Leu Asn Cys Leu  
165 170 175

Met Tyr Lys Met Ser Tyr Tyr Arg Phe Gly Glu Met Gln Leu Asp Phe  
180 185 190

Arg Thr Pro Pro Gly Phe Asp Arg Thr Arg Asn Ala Glu Ile Gly Asn  
195 200 205

Lys Asp Ile Lys Phe Lys His Leu Glu Glu Ala Phe Thr Ser Glu His  
210 215 220

Trp Leu Val Arg Ile Tyr Lys Val Lys Ala Pro Asp Asn Arg Glu Thr  
225 230 235 240

Leu Asp His Lys Pro Arg Val Thr Asn Ile Phe Pro Lys Gln Lys Tyr  
245 250 255

Leu Ser Lys Lys Thr Thr Lys Arg Lys Arg Gly Tyr Ile Lys Asn Lys  
260 265 270

Leu Val Phe Lys Lys Gly Lys Lys Ile Ser Lys Lys Thr Val  
275 280 285

<210> 152

<211> 4061

<212> DNA

<213> Homo sapiens

<400> 152

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gagattgctc agttgaaaaa ggatcaacgt aaaagagatc atcmacttag acttctggaa 180  
gccccaaaaa gaaaccaaga agtggttcta cgtcgcaaaa ctgaagagggt tacggctctt 240  
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```

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ttttgcaaaa ggatgtataa tatttctgtc tgctcagaat attaatltgt aaattctgca 3840
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cctgaaaata tttgcttgta aatgaaaact tagctagggc ttaaataaac atgttgctat 3960
gaaatkraaa aaaaaaaaaa aaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 4020
aaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa a 4061

```

&lt;210&gt; 153

&lt;211&gt; 910

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (43)

&lt;400&gt; 153

```

Met Lys Lys Thr Lys Val Arg Leu Met Lys Gln Met Lys Glu Glu Gln
  1                   5                   10                   15

```

```

Glu Lys Ala Arg Leu Thr Glu Ser Arg Arg Asn Arg Glu Ile Ala Gln
                20                   25                   30

```

Leu Lys Lys Asp Gln Arg Lys Arg Asp His Xaa Leu Arg Leu Leu Glu  
 35 40 45  
 Ala Gln Lys Arg Asn Gln Glu Val Val Leu Arg Arg Lys Thr Glu Glu  
 50 55 60  
 Val Thr Ala Leu Arg Arg Gln Val Arg Pro Met Ser Asp Lys Val Ala  
 65 70 75 80  
 Gly Lys Val Thr Arg Lys Leu Ser Ser Ser Asp Ala Pro Ala Gln Asp  
 85 90 95  
 Thr Gly Ser Ser Ala Ala Ala Val Glu Thr Asp Ala Ser Arg Thr Gly  
 100 105 110  
 Ala Gln Gln Lys Met Arg Ile Pro Val Ala Arg Val Gln Ala Leu Pro  
 115 120 125  
 Thr Pro Ala Thr Asn Gly Asn Arg Lys Lys Tyr Gln Arg Lys Gly Leu  
 130 135 140  
 Thr Gly Arg Val Phe Ile Ser Lys Thr Ala Arg Met Lys Trp Gln Leu  
 145 150 155 160  
 Leu Glu Arg Arg Val Thr Asp Ile Ile Met Gln Lys Met Thr Ile Ser  
 165 170 175  
 Asn Met Glu Ala Asp Met Asn Arg Leu Leu Lys Gln Arg Glu Glu Leu  
 180 185 190  
 Thr Lys Arg Arg Glu Lys Leu Ser Lys Arg Arg Glu Lys Ile Val Lys  
 195 200 205  
 Glu Asn Gly Glu Gly Asp Lys Asn Val Ala Asn Ile Asn Glu Glu Met  
 210 215 220  
 Glu Ser Leu Thr Ala Asn Ile Asp Tyr Ile Asn Asp Ser Ile Ser Asp  
 225 230 235 240  
 Cys Gln Ala Asn Ile Met Gln Met Glu Glu Ala Lys Glu Glu Gly Glu  
 245 250 255  
 Thr Leu Asp Val Thr Ala Val Ile Asn Ala Cys Thr Leu Thr Glu Ala  
 260 265 270  
 Arg Tyr Leu Leu Asp His Phe Leu Ser Met Gly Ile Asn Lys Gly Leu  
 275 280 285  
 Gln Ala Ala Gln Lys Glu Ala Gln Ile Lys Val Leu Glu Gly Arg Leu  
 290 295 300  
 Lys Gln Thr Glu Ile Thr Ser Ala Thr Gln Asn Gln Leu Leu Phe His  
 305 310 315 320  
 Met Leu Lys Glu Lys Ala Glu Leu Asn Pro Glu Leu Asp Ala Leu Leu  
 325 330 335  
 Gly His Ala Leu Gln Asp Leu Asp Ser Val Pro Leu Glu Asn Val Glu  
 340 345 350

Asp Ser Thr Asp Glu Asp Ala Pro Leu Asn Ser Pro Gly Ser Glu Gly  
 355 360 365  
 Ser Thr Leu Ser Ser Asp Leu Met Lys Leu Cys Gly Glu Val Lys Pro  
 370 375 380  
 Lys Asn Lys Ala Arg Arg Arg Thr Thr Thr Gln Met Glu Leu Leu Tyr  
 385 390 395 400  
 Ala Asp Ser Ser Glu Leu Ala Ser Asp Thr Ser Thr Gly Asp Ala Ser  
 405 410 415  
 Leu Pro Gly Pro Leu Thr Pro Val Ala Glu Gly Gln Glu Ile Gly Met  
 420 425 430  
 Asn Thr Glu Thr Ser Gly Thr Ser Ala Arg Glu Lys Glu Leu Ser Pro  
 435 440 445  
 Pro Pro Gly Leu Pro Ser Lys Ile Gly Ser Ile Ser Arg Gln Ser Ser  
 450 455 460  
 Leu Ser Glu Lys Lys Ile Pro Glu Pro Ser Pro Val Thr Arg Arg Lys  
 465 470 475 480  
 Ala Tyr Glu Lys Ala Glu Lys Ser Lys Ala Lys Glu Gln Lys His Ser  
 485 490 495  
 Asp Ser Gly Thr Ser Glu Ala Ser Leu Ser Pro Pro Ser Ser Pro Pro  
 500 505 510  
 Ser Arg Pro Arg Asn Glu Leu Asn Val Phe Asn Arg Leu Thr Val Ser  
 515 520 525  
 Gln Gly Asn Thr Ser Val Gln Gln Asp Lys Ser Asp Glu Ser Asp Ser  
 530 535 540  
 Ser Leu Ser Glu Val His Ser Arg Ser Ser Arg Arg Gly Ile Ile Asn  
 545 550 555 560  
 Pro Phe Pro Ala Ser Lys Gly Ile Arg Ala Phe Pro Leu Gln Cys Ile  
 565 570 575  
 His Ile Ala Glu Gly His Thr Lys Ala Val Leu Cys Val Asp Ser Thr  
 580 585 590  
 Asp Asp Leu Leu Phe Thr Gly Ser Lys Asp Arg Thr Cys Lys Val Trp  
 595 600 605  
 Asn Leu Val Thr Gly Gln Glu Ile Met Ser Leu Gly Gly His Pro Asn  
 610 615 620  
 Asn Val Val Ser Val Lys Tyr Cys Asn Tyr Thr Ser Leu Val Phe Thr  
 625 630 635 640  
 Val Ser Thr Ser Tyr Ile Lys Val Trp Asp Ile Arg Asp Ser Ala Lys  
 645 650 655  
 Cys Ile Arg Thr Leu Thr Ser Ser Gly Gln Val Thr Leu Gly Asp Ala  
 660 665 670

Cys Ser Ala Ser Thr Ser Arg Thr Val Ala Ile Pro Ser Gly Glu Asn  
 675 680 685  
 Gln Ile Asn Gln Ile Ala Leu Asn Pro Thr Gly Thr Phe Leu Tyr Ala  
 690 695 700  
 Ala Ser Gly Asn Ala Val Arg Met Trp Asp Leu Lys Arg Phe Gln Ser  
 705 710 715 720  
 Thr Gly Lys Leu Thr Gly His Leu Gly Pro Val Met Cys Leu Thr Val  
 725 730 735  
 Asp Gln Ile Ser Ser Gly Gln Asp Leu Ile Ile Thr Gly Ser Lys Asp  
 740 745 750  
 His Tyr Ile Lys Met Phe Asp Val Thr Glu Gly Ala Leu Gly Thr Val  
 755 760 765  
 Ser Pro Thr His Asn Phe Glu Pro Pro His Tyr Asp Gly Ile Glu Ala  
 770 775 780  
 Leu Thr Ile Gln Gly Asp Asn Leu Phe Ser Gly Ser Arg Asp Asn Gly  
 785 790 795 800  
 Ile Lys Lys Trp Asp Leu Thr Gln Lys Asp Leu Leu Gln Gln Val Pro  
 805 810 815  
 Asn Ala His Lys Asp Trp Val Cys Ala Leu Gly Val Val Pro Asp His  
 820 825 830  
 Pro Val Leu Leu Ser Gly Cys Arg Gly Gly Ile Leu Lys Val Trp Asn  
 835 840 845  
 Met Asp Thr Phe Met Pro Val Gly Glu Met Lys Gly His Asp Ser Pro  
 850 855 860  
 Ile Asn Ala Ile Cys Val Asn Ser Thr His Ile Phe Thr Ala Ala Asp  
 865 870 875 880  
 Asp Arg Thr Val Arg Ile Trp Lys Ala Arg Asn Leu Gln Asp Gly Gln  
 885 890 895  
 Ile Ser Asp Thr Gly Asp Leu Gly Glu Asp Ile Ala Ser Asn  
 900 905 910

<210> 154  
 <211> 372  
 <212> DNA  
 <213> Homo sapiens

<400> 154  
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 ttggatcagt gctattgtga aaggacttgc accatgaagg gaaccaccta ccgagaattt 180  
 gagtcttgga tagacggctg taagaactgc acatgcctga atggaaccat ccagtgtgaa 240  
 actctaactt gcccaaattc tgactgccca cttaagtccg ctcttgcgta tgtggatggc 300  
 aaatgctgta aggaatgcaa atcgatatte caatttcaag gacgaacctt ctttgaagga 360  
 gaaagaaata ca 372

<210> 155  
 <211> 761  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (108)

<220>  
 <221> unsure  
 <222> (191)

<220>  
 <221> unsure  
 <222> (268)

<220>  
 <221> unsure  
 <222> (299)

<400> 155  
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 aggctgtcca gctttggatt gtccagagtc tcatcagata accttgnttc acagctgttg 120  
 caaagtttgt aaaggttatg atttttgttt tgaaaggcat aactgcatgg agaattccat 180  
 ctgcagaaat ntgaatgaca gggctgtttg tagctgtcga gatggtttta gggtttttcg 240  
 agaggataat gcctactgtg aagacatnga tgagtgtgct gaagggcgcc attactgtng 300  
 tgaaaataca atgtgtgtca acaccccggt ttcttttatg tgcacttgca aaactggata 360  
 catcagaatt gatgattatt catgtacaga acatgatgag tgtatcaca atcagcacag 420  
 ctgtgatgaa aatgctttat gcttcaacac tggtggagga cacaactgtg tttgcaagcc 480  
 gggctataca gggaatggaa cgacatgcaa agcattttgc aaagatggct gtaggaatgg 540  
 aggagcctgt attgccgcta atgtgtgtgc ctgcccacaa ggcttctactg gaccagctg 600  
 tgaaacggac attgatgaat gctctgatgg ttttgttcaa tgtgacagtc gtgctaattg 660  
 cattaacctg cctggatggg accactgtga gtgcagagat ggctaccatg acaatgggat 720  
 gttttcacca agtgagagaat cgtgtgaaga tattgatgag t 761

<210> 156  
 <211> 240  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> UNSURE  
 <222> (23)

<220>  
 <221> UNSURE  
 <222> (51)

<220>  
 <221> UNSURE  
 <222> (76)

<220>  
 <221> UNSURE  
 <222> (87)

<400> 156  
 Met Lys Phe Val Glu Ser Ser Gly Cys Pro Ala Leu Asp Cys Pro Glu  
 1 5 10 15

Ser His Gln Ile Thr Leu Xaa His Ser Cys Cys Lys Val Cys Lys Gly  
                   20                  25                  30  
 Tyr Asp Phe Cys Phe Glu Arg His Asn Cys Met Glu Asn Ser Ile Cys  
           35                  40                  45  
 Arg Asn Xaa Asn Asp Arg Ala Val Cys Ser Cys Arg Asp Gly Phe Arg  
           50                  55                  60  
 Val Phe Arg Glu Asp Asn Ala Tyr Cys Glu Asp Xaa Asp Glu Cys Ala  
           65                  70                  75                  80  
 Glu Gly Arg His Tyr Cys Xaa Glu Asn Thr Met Cys Val Asn Thr Pro  
                   85                  90                  95  
 Gly Ser Phe Met Cys Ile Cys Lys Thr Gly Tyr Ile Arg Ile Asp Asp  
           100                  105                  110  
 Tyr Ser Cys Thr Glu His Asp Glu Cys Ile Thr Asn Gln His Ser Cys  
           115                  120                  125  
 Asp Glu Asn Ala Leu Cys Phe Asn Thr Val Gly Gly His Asn Cys Val  
           130                  135                  140  
 Cys Lys Pro Gly Tyr Thr Gly Asn Gly Thr Thr Cys Lys Ala Phe Cys  
           145                  150                  155                  160  
 Lys Asp Gly Cys Arg Asn Gly Gly Ala Cys Ile Ala Ala Asn Val Cys  
                   165                  170                  175  
 Ala Cys Pro Gln Gly Phe Thr Gly Pro Ser Cys Glu Thr Asp Ile Asp  
           180                  185                  190  
 Glu Cys Ser Asp Gly Phe Val Gln Cys Asp Ser Arg Ala Asn Cys Ile  
           195                  200                  205  
 Asn Leu Pro Gly Trp Tyr His Cys Glu Cys Arg Asp Gly Tyr His Asp  
           210                  215                  220  
 Asn Gly Met Phe Ser Pro Ser Gly Glu Ser Cys Glu Asp Ile Asp Glu  
           225                  230                  235                  240

&lt;210&gt; 157

&lt;211&gt; 342

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 157

gcagaaaatt ttctctaga tcagaatctt caagaatcag ttaggttcct cactgcaaga 60  
 aataaaatgt caggcagtga atgaattata ttttaagaag taaagcaaag aagctataac 120  
 atgttatgta cagtacactc tgaaaagaaa tctgaaacaa gttattgtaa tgataaaaaat 180  
 aatgcacagg catggttact taatatcttc taacaggaaa agtcatccct atttccttgt 240  
 ttactgcac ttaatattat ttggttgaat ttgttcagta taagttcggt ccttgtgcaa 300  
 aattaaataa atatttttct taccttaaaa aaaaaaaaaa aa 342

&lt;210&gt; 158

&lt;211&gt; 1445

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 158

```

gtgcgcatgg ggacgctata gcaattcggt tgctgtcctt cctctccttc gaagatgaca 60
aggcctacca tcgtttcttc ctgcctttgg gccgtcaggc agttgggttg gaccgctcc 120
aaccctcggg tcttcctgca atacagtggg tacaatttgt catggctact ctgagataag 180
accacttttt tatctgagct tctgtgacct gctcctggga ctttgctggc tcacggagac 240
acttctctat ggagcttcag tagcaaataa ggacatcatc tgctataacc tacaagcagt 300
tggacagata ttctacattt cctcatttct ctacaccgtc aattacatct ggtatttgta 360
cacagagctg aggtgaaac acacccaaag tggacagagc acatctccac tggatgata 420
ttatacttgt cgattttgtc aaatggcctt tgttttctca agcctgatac ctctgctatt 480
gatgacacct gtattctgtc tgggaaatac tagtgaatgt ttccaaaact tcagtcagag 540
ccacaattgt atcttgatgc actcaccacc atcagccatg gctgaacttc caccttctgc 600
caacacatct gtctgtagca cactttattt ttatgggtatc gccattttcc tgggcagctt 660
tgtactcagc ctcttacc tttatgggtctt acttatccga gccagacat tgtataagaa 720
gtttgtgaag tcaactgggt ttctggggag tgaacagtgg gcagtgatc acattgtgga 780
ccaacgggtg cgcttctacc cagtggcctt cttttgctgc tggggcccag ctgtcattct 840
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ttttcctgcc agtacttcta ccattttttg aaactacaat actggaacat ccaggaactg 1140
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ctattcaggg agaggaagac actttccatc tcagagatag actcgtgtta cttgatgga 1380
tattggattt gtctaagtct cttctagaaa aaataaattc tagattatta aaaaaaaaaa 1440
aaaaa 1445

```

&lt;210&gt; 159

&lt;211&gt; 245

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 159

```

Met Lys His Thr Gln Ser Gly Gln Ser Thr Ser Pro Leu Val Ile Asp
 1             5             10             15

Tyr Thr Cys Arg Phe Cys Gln Met Ala Phe Val Phe Ser Ser Leu Ile
      20             25             30

Pro Leu Leu Leu Met Thr Pro Val Phe Cys Leu Gly Asn Thr Ser Glu
 35             40             45

Cys Phe Gln Asn Phe Ser Gln Ser His Asn Cys Ile Leu Met His Ser
 50             55             60

Pro Pro Ser Ala Met Ala Glu Leu Pro Pro Ser Ala Asn Thr Ser Val
 65             70             75             80

Cys Ser Thr Leu Tyr Phe Tyr Gly Ile Ala Ile Phe Leu Gly Ser Phe
      85             90             95

Val Leu Ser Leu Leu Thr Ile Met Val Leu Leu Ile Arg Ala Gln Thr
 100             105             110

Leu Tyr Lys Lys Phe Val Lys Ser Thr Gly Phe Leu Gly Ser Glu Gln
 115             120             125

Trp Ala Val Ile His Ile Val Asp Gln Arg Val Arg Phe Tyr Pro Val

```

130                      135                      140

Ala Phe Phe Cys Cys Trp Gly Pro Ala Val Ile Leu Met Ile Ile Lys  
145                      150                      155                      160

Leu Thr Lys Pro Gln Asp Thr Lys Leu His Met Ala Leu Tyr Val Leu  
                    165                      170                      175

Gln Ala Leu Thr Ala Thr Ser Gln Gly Leu Leu Asn Cys Gly Val Tyr  
                    180                      185                      190

Gly Trp Thr Gln His Lys Phe His Gln Leu Lys Gln Glu Ala Arg Arg  
                    195                      200                      205

Asp Ala Asp Thr Gln Thr Pro Leu Leu Cys Ser Gln Lys Arg Phe Tyr  
                    210                      215                      220

Ser Arg Gly Leu Asn Ser Leu Glu Ser Thr Leu Thr Phe Pro Ala Ser  
225                      230                      235                      240

Thr Ser Thr Ile Phe  
                    245

&lt;210&gt; 160

&lt;211&gt; 3550

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 160

```

ccccctcgata atggattact aaatgggata cacgctgtac cagttcgctc cgagccccgg 60
ccgcctgtcc gtcgatgcac cgaaaagggt gaagtagaga aataaagtct ccccgctgaa 120
ctactatgag gtcagaagcc ttgctgctat atttcacact gctacacttt gctggggctg 180
gtttcccaga agattctgag ccaatcagta ttctgcattg caactataca aaacagtatc 240
cgggtgtttgt gggccacaag ccaggacgga acaccacaca gaggcacagg ctggacatcc 300
agatgattat gatcatgaac ggaaccctct acattgctgc tagggaccat atttatactg 360
ttgatataga cacatcacac acsgaagaaa tttattgtag caaaaaactg acatggaaat 420
ctagacaggc cgatgtagac acatgcagaa tgaagggaaa acataaggat gagtgccaca 480
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ccttcaaccc ttctgcaga aactataaga tggatacatt ggaaccattc ggggatgaat 600
tcagcggaat ggccagatgc ccatatgatg ccaaacatgc caacgttgca ctgtttgcag 660
atggaaaact atactcagcc acagtgactg acttccttgc cattgacgca gtcatttacc 720
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cgcgcttgaa ctgctcagtt cctggagact ctcatTTTTA tttcaacatt ctccaggcag 1020
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ggaagtgtaa aaaaacctgt attgcctcca gagaccata ttgtggatgg ataaaggaag 1740
tggtgctctg cagccattta tcaccaaca gcagactgac ttttgagcag gacatagagc 1800

```



```

gtggcaatac agatgggtctg ggggactgtc acaattcctt tgtggcactg aatggagtga 1860
ttcgggaaag ttacctcaaa ggccacgacc agctgggtcc cgtcaccctc ttggccattg 1920
cagtcatcct ggcttttcgtc atggggggccg tcttctcggg catcacctgc tactgcgtct 1980
gtgatcatcg gcgcaaagac gtggctgtgg tgcagcgcaa ggagaaggag ctcacccact 2040
cgcgccgggg ctccatgagc agcgctacca agctcagcgg cctcttttggg gacactcaat 2100
ccaaagaccc aaagccggag gccatcctca cgccactcat gcacaacggc aagctcgcca 2160
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gggtttgcgt tccaacctgc aaaacacaaa tacatttttt aaaatcaaga aaatttaaaa 3540
aaaaaaaaa 3550

```

&lt;210&gt; 161

&lt;211&gt; 975

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 161

```

Met Arg Ser Glu Ala Leu Leu Leu Tyr Phe Thr Leu Leu His Phe Ala
  1              5              10              15

```

```

Gly Ala Gly Phe Pro Glu Asp Ser Glu Pro Ile Ser Ile Ser His Gly
      20              25              30

```

```

Asn Tyr Thr Lys Gln Tyr Pro Val Phe Val Gly His Lys Pro Gly Arg
      35              40              45

```

```

Asn Thr Thr Gln Arg His Arg Leu Asp Ile Gln Met Ile Met Ile Met
      50              55              60

```

```

Asn Gly Thr Leu Tyr Ile Ala Ala Arg Asp His Ile Tyr Thr Val Asp
      65              70              75              80

```

```

Ile Asp Thr Ser His Thr Glu Glu Ile Tyr Cys Ser Lys Lys Leu Thr
      85              90              95

```

```

Trp Lys Ser Arg Gln Ala Asp Val Asp Thr Cys Arg Met Lys Gly Lys
      100             105             110

```

```

His Lys Asp Glu Cys His Asn Phe Ile Lys Val Leu Leu Lys Lys Asn
      115             120             125

```

Asp Asp Ala Leu Phe Val Cys Gly Thr Asn Ala Phe Asn Pro Ser Cys  
 130 135 140  
 Arg Asn Tyr Lys Met Asp Thr Leu Glu Pro Phe Gly Asp Glu Phe Ser  
 145 150 155 160  
 Gly Met Ala Arg Cys Pro Tyr Asp Ala Lys His Ala Asn Val Ala Leu  
 165 170 175  
 Phe Ala Asp Gly Lys Leu Tyr Ser Ala Thr Val Thr Asp Phe Leu Ala  
 180 185 190  
 Ile Asp Ala Val Ile Tyr Arg Ser Leu Gly Glu Ser Pro Thr Leu Arg  
 195 200 205  
 Thr Val Lys His Asp Ser Lys Trp Leu Lys Glu Pro Tyr Phe Val Gln  
 210 215 220  
 Ala Val Asp Tyr Gly Asp Tyr Ile Tyr Phe Phe Phe Arg Glu Ile Ala  
 225 230 235 240  
 Val Glu Tyr Asn Thr Met Gly Lys Val Val Phe Pro Arg Val Ala Gln  
 245 250 255  
 Val Cys Lys Asn Asp Met Gly Gly Ser Gln Arg Val Leu Glu Lys Gln  
 260 265 270  
 Trp Thr Ser Phe Leu Lys Ala Arg Leu Asn Cys Ser Val Pro Gly Asp  
 275 280 285  
 Ser His Phe Tyr Phe Asn Ile Leu Gln Ala Val Thr Asp Val Ile Arg  
 290 295 300  
 Ile Asn Gly Arg Asp Val Val Leu Ala Thr Phe Ser Thr Pro Tyr Asn  
 305 310 315 320  
 Ser Ile Pro Gly Ser Ala Val Cys Ala Tyr Asp Met Leu Asp Ile Ala  
 325 330 335  
 Ser Val Phe Thr Gly Arg Phe Lys Glu Gln Lys Ser Pro Asp Ser Thr  
 340 345 350  
 Trp Thr Pro Val Pro Asp Glu Arg Val Pro Lys Pro Arg Pro Gly Cys  
 355 360 365  
 Cys Ala Gly Ser Ser Ser Leu Glu Arg Tyr Ala Thr Ser Asn Glu Phe  
 370 375 380  
 Pro Asp Asp Thr Leu Asn Phe Ile Lys Thr His Pro Leu Met Asp Glu  
 385 390 395 400  
 Ala Val Pro Ser Ile Phe Asn Arg Pro Trp Phe Leu Arg Thr Met Val  
 405 410 415  
 Arg Tyr Arg Leu Thr Lys Ile Ala Val Asp Thr Ala Ala Gly Pro Tyr  
 420 425 430  
 Gln Asn His Thr Val Val Phe Leu Gly Ser Glu Lys Gly Ile Ile Leu  
 435 440 445

Lys Phe Leu Ala Arg Ile Gly Asn Ser Gly Phe Leu Asn Asp Ser Leu  
 450 455 460  
 Phe Leu Glu Glu Met Ser Val Tyr Asn Ser Glu Lys Cys Ser Tyr Asp  
 465 470 475 480  
 Gly Val Glu Asp Lys Arg Ile Met Gly Met Gln Leu Asp Arg Ala Ser  
 485 490 495  
 Ser Ser Leu Tyr Val Ala Phe Ser Thr Cys Val Ile Lys Val Pro Leu  
 500 505 510  
 Gly Arg Cys Glu Arg His Gly Lys Cys Lys Lys Thr Cys Ile Ala Ser  
 515 520 525  
 Arg Asp Pro Tyr Cys Gly Trp Ile Lys Glu Gly Gly Ala Cys Ser His  
 530 535 540  
 Leu Ser Pro Asn Ser Arg Leu Thr Phe Glu Gln Asp Ile Glu Arg Gly  
 545 550 555 560  
 Asn Thr Asp Gly Leu Gly Asp Cys His Asn Ser Phe Val Ala Leu Asn  
 565 570 575  
 Gly Val Ile Arg Glu Ser Tyr Leu Lys Gly His Asp Gln Leu Val Pro  
 580 585 590  
 Val Thr Leu Leu Ala Ile Ala Val Ile Leu Ala Phe Val Met Gly Ala  
 595 600 605  
 Val Phe Ser Gly Ile Thr Val Tyr Cys Val Cys Asp His Arg Arg Lys  
 610 615 620  
 Asp Val Ala Val Val Gln Arg Lys Glu Lys Glu Leu Thr His Ser Arg  
 625 630 635 640  
 Arg Gly Ser Met Ser Ser Val Thr Lys Leu Ser Gly Leu Phe Gly Asp  
 645 650 655  
 Thr Gln Ser Lys Asp Pro Lys Pro Glu Ala Ile Leu Thr Pro Leu Met  
 660 665 670  
 His Asn Gly Lys Leu Ala Thr Pro Gly Asn Thr Ala Lys Met Leu Ile  
 675 680 685  
 Lys Ala Asp Gln His His Leu Asp Leu Thr Ala Leu Pro Thr Pro Glu  
 690 695 700  
 Ser Thr Pro Thr Leu Gln Gln Lys Arg Lys Pro Ser Arg Gly Ser Arg  
 705 710 715 720  
 Glu Trp Glu Arg Asn Gln Asn Leu Ile Asn Ala Cys Thr Lys Asp Met  
 725 730 735  
 Pro Pro Met Gly Ser Pro Val Ile Pro Thr Asp Leu Pro Leu Arg Ala  
 740 745 750  
 Ser Pro Ser His Ile Pro Ser Val Val Val Leu Pro Ile Thr Gln Gln  
 755 760 765

Gly Tyr Gln His Glu Tyr Val Asp Gln Pro Lys Met Ser Glu Val Ala  
 770 775 780  
 Gln Met Ala Leu Glu Asp Gln Ala Ala Thr Leu Glu Tyr Lys Thr Ile  
 785 790 795 800  
 Lys Glu His Phe Ser Ser Lys Ser Pro Asn His Gly Val Asn Leu Val  
 805 810 815  
 Glu Asn Leu Asp Ser Leu Pro Pro Lys Val Pro Gln Arg Glu Ala Ser  
 820 825 830  
 Leu Gly Pro Pro Gly Ala Ser Leu Phe Gln Thr Gly Leu Ser Lys Arg  
 835 840 845  
 Leu Glu Met His His Ser Phe Ser Tyr Gly Val Asp Tyr Lys Arg Ser  
 850 855 860  
 Tyr Pro Thr Asn Ser Leu Thr Arg Ser His Gln Ala Thr Thr Leu Lys  
 865 870 875 880  
 Arg Asn Asn Thr Asn Ser Ser Asn Ser Ser His Leu Ser Arg Asn Gln  
 885 890 895  
 Ser Phe Gly Arg Gly Asp Asn Pro Pro Pro Ala Pro Gln Arg Val Asp  
 900 905 910  
 Ser Ile Gln Val His Ser Ser Gln Pro Ser Gly Gln Ala Val Thr Val  
 915 920 925  
 Ser Arg Gln Pro Ser Leu Asn Ala Tyr Asn Ser Leu Thr Arg Ser Gly  
 930 935 940  
 Leu Lys Arg Thr Pro Ser Leu Lys Pro Asp Val Pro Pro Lys Pro Ser  
 945 950 955 960  
 Phe Ala Pro Leu Ser Thr Ser Met Lys Pro Asn Asp Ala Cys Thr  
 965 970 975

&lt;210&gt; 162

&lt;211&gt; 1723

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 162

ctgcagactt tggggtcacc ggccagccac acaggcaccg ttttcagatg tccacttctc 60  
 attgggtaca tcaatctttt aactttgggg gtcacagttt tagccacett tcgggggggtg 120  
 actggagcag taggagggtgt ggggtcattt tatgaatata ataaaatgga gctgactatg 180  
 gacrrrgact wagtgtgggg gagaggggac gatacagggt gtgtgtcttg gagtgacctg 240  
 gggacagggg cccccgggtg gtcctatggc aggatgagaa rggagggact tggtcccccc 300  
 agagccccgt ggaagctact gttctctcca gtgtctcgag cgtagccaaa ataagggttg 360  
 gaggtccccg gctgtctgc tgtggtctga gctggctgca agcccagggt ggggagcgag 420  
 tctgggaaga ttggctttga ctctctgttg ccagaggaga tgccatccca gcacggcccc 480  
 cactgtagtc caggctcgtg gtggcagcgg gggcaagggg aggggcaagg ctgccccac 540  
 cccacgcacc aagtcacgcc aagtctcagc aggtaaaagc acgtgagcct agggcgagcg 600  
 gagggagtc tgggggcccc gcaggtcagg agggaaaagc gggctcagag ggcacgttg 660  
 cccagggca gggctctacc tgggggtcag gagcaccttg gtcttgatga ttgattgatt 720  
 gatagaatgg agctgggtct gagcctccca ggcttgagct cctgggagtt cttgtgcggt 780

```

gagctgggca gctcctgggt aggtccgggc accaagcagg ccctgatgtg gacagagtcc 840
catcagaggg agctgatgaa gaatgggtccc tgtaagtaag tctactagggt caacaactgc 900
ctggccgagc actcagcccc tggagctcag gccaacacca gagccccggt tttagggggc 960
aggagagcag gtgaccaatt atttggggag tcttgggtag aatttccgcc acacattctc 1020
cccagggctg caggggtctt ccgaggcagg gcggtggagc aggattcagg atgtgggtggg 1080
aatagagtga ggggcagtgg gtgggcagac ctgggcgtca gaggtcctga tgggaaagga 1140
ggcaggggct acccagagag gggggctcgt gtggcacagc cccaccgac tccgcgctcc 1200
ccctccccctg tgagccccgg gggctgtaca tactctactc catccccctg tccatccctg 1260
agaccacccc cgccgccctt gcgtcgactt agcaaccacc tcataggccc acccacctcg 1320
ggatccgagc caaccatccc acatcacaaa ctttgggttg ggggacttta cgttcgttta 1380
atttctcatt ttgtacggag aaatattctt ttcaaaagcg tcttttgact gaagtaactt 1440
tcttggtgct gttgttaact cgttcctttt tttaatttat tccccaccc caggcagccc 1500
tcttggttcc tactcaccct cccccctcc cccaccctcc gtcccatctg aaccatttgt 1560
ttcttttctt tccgtcagat tttggaaaaa ttctcctctc ctccccgcc cctccacacc 1620
atcctcccs g atttaaatat agtcactgct acaagtaaca gatgcactgt gaagattcca 1680
gtattaataa aggtgtactg taattaacaa aaaaaaaaaa aaa 1723

```

<210> 163

<211> 101

<212> PRT

<213> Homo sapiens

<220>

<221> UNSURE

<222> (49)

<220>

<221> UNSURE

<222> (51)

<220>

<221> UNSURE

<222> (81)

<400> 163

```

Val Phe Arg Cys Pro Leu Leu Ile Gly Tyr Ile Asn Leu Leu Thr Leu
  1             5             10             15

```

```

Gly Val Thr Val Leu Ala Thr Phe Arg Gly Val Thr Gly Ala Val Gly
      20             25             30

```

```

Gly Val Gly Ser Phe Tyr Glu Tyr Asn Lys Met Glu Leu Thr Met Asp
  35             40             45

```

```

Xaa Asp Xaa Val Trp Gly Arg Gly Asp Asp Thr Gly Cys Val Ser Gly
  50             55             60

```

```

Ser Ala Trp Gly Thr Gly Thr Pro Arg Trp Ser Tyr Gly Arg Met Arg
  65             70             75             80

```

```

Xaa Glu Gly Leu Gly Ser Pro Arg Ala Arg Trp Lys Leu Leu Phe Ser
      85             90             95

```

```

Pro Val Ser Arg Ala
      100

```

<210> 164

<211> 469

<212> DNA

<213> Homo sapiens

<400> 164

```

gcaacataca agccggccat attagagaga tggaaataaa gcttccttaa tgttgatat 60
gtctttgaag tacatccgtg cttttttttt tagcatccaa ccattcctcc cttgtagttc 120
tcgccccctc aaatcacccct ctcccgtagc ccaccgact aacatctcag tctctgaaaa 180
tgcacagaga tgcctggcta cctcgccctg ccttcagcct caccggggtc agtctctttt 240
tctctttggt gccaccagga cggagcatgg aggtcacagt acctgccacc ctcaacgtcc 300
tcaatggctc tgacgcccgc ctgcctgca cttcaactc ctgctacaca gtgaaccaca 360
aacagttctc cctgaactgg acttaccagg agtgcaacaa ctgctctgag gagatgttcc 420
tccagttccg catgaagatc attaacctga agctggagcg gtttcaaga 469

```

<210> 165

<211> 96

<212> PRT

<213> Homo sapiens

<400> 165

```

Met His Arg Asp Ala Trp Leu Pro Arg Pro Ala Phe Ser Leu Thr Gly
  1             5             10             15

Leu Ser Leu Phe Phe Ser Leu Val Pro Pro Gly Arg Ser Met Glu Val
          20             25             30

Thr Val Pro Ala Thr Leu Asn Val Leu Asn Gly Ser Asp Ala Arg Leu
    35             40             45

Pro Cys Thr Phe Asn Ser Cys Tyr Thr Val Asn His Lys Gln Phe Ser
    50             55             60

Leu Asn Trp Thr Tyr Gln Glu Cys Asn Asn Cys Ser Glu Glu Met Phe
    65             70             75             80

Leu Gln Phe Arg Met Lys Ile Ile Asn Leu Lys Leu Glu Arg Phe Gln
          85             90             95

```

<210> 166

<211> 454

<212> DNA

<213> Homo sapiens

<400> 166

```

tggcttttgg ctacagagag ggaagggaaa gcctgaggcc ggcataaggg gaggccttgg 60
aacctgagct gccaatgcc aacctgtccc atctgaggcc acgataactcg ctccctctccc 120
aacaactcct ttggtgggga caaaagtgc aattgtaggc caggcacagt ggctcacgcc 180
tgtaatccca gcactttggg aggccaaaggc ggggtggatta cctccatctg tttagtagaa 240
atggggcaaaa ccccatTTTT actaaaaata caagaattag ctgggcgtgg tggcgtgtgc 300
ctgtaaatccc agctatttgg gaggctgagg caggagaatc gcttgagccc gggaagcaga 360
gggtgcagtg aactgagata gtgatagtgc cactgcaatt cagcctgggt gacatagaga 420
gactccatct caaaaaaaaaa aaaaaaaaaa aaaa 454

```

<210> 167

<211> 736

<212> DNA

<213> Homo sapiens

<220>

<221> unsure

<222> (680)

&lt;220&gt;

&lt;221&gt; unsure

&lt;222&gt; (704)

&lt;400&gt; 167

```

gttttttaaac attatgttct acatgataaa tacatataat agtatgtcta tttaaataat 60
taaatttgaa aaaaactaat caaatattat cataagtaat gataaaaacc acaatttctt 120
ttgcagcaaa ctaataacac ctggatttct caatttatta agttgtactt acctgatgct 180
gatgatgatt actgtattta cacattgtct cagagctcac tcttgaggag gttgtggcct 240
cgaaaatgcc ttgttgcccc tctggaatct gtcttttcag cttcatctcc tcctcctcac 300
ctcctgctgt ggtgcacaga tacctatagg caggctccat ctctcctccc ccagctcctc 360
ccctagtcca cagataccta taggcaggct tcatctcctc ctccccagct tctcccctag 420
tgcacagata cctataggca ggctccatct cctcctcccc agctcctccc ctartgcaca 480
gacacctata ggcaagctcc atctcctcct ctttagctag cctccccatc tcatcacaac 540
gcatgtctgt gacctttggt aatcatttac agtgccacac ggaaccctgt attttgcaca 600
cagcaaaaca aacaatgttt agctttatct atggtatttg atgactgtaa atggaaataa 660
atattgttct ttattttttn aaaaaaaaaa aaaaaaaaaa aaanaaaaaa aaaaaaaaaa 720
aaaaaaaaaa aaaaaa                                     736

```

&lt;210&gt; 168

&lt;211&gt; 114

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (100)

&lt;400&gt; 168

```

Met Leu Met Met Ile Thr Val Phe Thr His Cys Leu Arg Ala His Ser
  1             5             10             15

```

```

Cys Gly Gly Cys Gly Leu Glu Asn Ala Leu Leu Ser Leu Trp Asn Leu
      20             25             30

```

```

Ser Phe Gln Leu His Leu Leu Leu Thr Ser Cys Cys Gly Ala Gln
    35             40             45

```

```

Ile Pro Ile Gly Arg Leu His Leu Leu Leu Pro Ser Ser Ser Pro Ser
    50             55             60

```

```

Ala Gln Ile Pro Ile Gly Arg Leu His Leu Leu Leu Pro Ser Phe Ser
    65             70             75             80

```

```

Pro Ser Ala Gln Ile Pro Ile Gly Arg Leu His Leu Leu Leu Pro Ser
      85             90             95

```

```

Ser Ser Pro Xaa Ala Gln Thr Pro Ile Gly Lys Leu His Leu Leu Leu
    100             105             110

```

Phe Ser

&lt;210&gt; 169

&lt;211&gt; 1427

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 169

```

gtagtacta actccaacac ctaatagcat tggtagaaag cttataaatg cagttattta 60
gcctcgacta agatttttct gatacctagt ttcacttttt aatgccctct gaaagttttt 120
tgatcagttg tttaatggga gatctgaaat gttaaactca gaccagaaag aagagaacct 180
gttttctaga aattaggttt ttaatccaag taagatgcaa gcttttgctt ttttaataac 240
ttgtatagct aaaaacttga cggtagaaaag ctctcagatc aaagctgac cttctgtcag 300
taatgattct aaaaataagc aagattttta tggggaatat attttatttc attcttatct 360
caaacctagg tactgtggtc gttttgagtt catttcgagg cattttcaat gtgcctcagg 420
ccacatccaa cctctyccca gggccagatt taatgttcag cctcataaaag gttatcatag 480
ttttaacatt taagtactat tttgcagtgg gtatatacca aaatttgcta atagtaagat 540
aaccttagtt atatatcatt cacgttagtt ctatcttgga ggcaataaac atttcttggt 600
caagaaattc atgttctatc ttggaggcaa taaacaaaca ttttttggtc aaaattaggg 660
ctacctatt gtcttctatg cttttcctga tctgtggtca aacatttttc ttagtcattt 720
agaaattttc tatgttggtt taaattttct ttaaacttag aatggagtat gtgaccaata 780
ctttcctttg gaatggtatg gacatttgaa atagagccca ttctttataa agtataaaat 840
atgtttaatg ctagtatttt taactaaact tttgagaaac tagattcaca tgctgttgta 900
agaaataata cagagacctc tttcgtgtac ctttcacttt gtttccca cagtgaacat 960
ctttcaaaac tgtcatacaa tatcataccc aggatactga cactggtata gctaagatag 1020
agaacgtttc cacacagaac tttttctagc acagggatcc ctcatcttgc ttttgatgac 1080
catacccact tcaactcccat cctactccc ttcttaaccc ttggcaacca taatctgttc 1140
tccattttta tagttttttt tttttcattt caataaagct gtataactgg aatcataata 1200
atatgtaacc ttttgggatt ggcttttttt catttagcat gattttctgg aggttaatcc 1260
agcttattat gtgtatcaag tctattgaca ggtacttttt agtgtgaata gaatccata 1320
gtatagatgt accacagttt gtttaactgt tcacctgctg agagacattg ggccagtttt 1380
tggctactat aaataaagtt gctataaaca aaaaaaaaa aaaaaaa 1427

```

&lt;210&gt; 170

&lt;211&gt; 79

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (45)

&lt;400&gt; 170

```

Met Ile Leu Lys Ile Ser Lys Ile Leu Met Gly Asn Ile Phe Tyr Phe
  1             5             10             15

Ile Leu Ile Ser Asn Leu Gly Thr Val Val Val Leu Ser Ser Phe Arg
      20             25             30

Gly Ile Phe Asn Val Pro Gln Ala Thr Ser Asn Leu Xaa Pro Gly Pro
      35             40             45

Asp Leu Met Phe Ser Leu Ile Lys Val Ile Ile Val Leu Thr Phe Lys
      50             55             60

Tyr Tyr Phe Ala Val Gly Ile Tyr Gln Asn Leu Leu Ile Val Arg
      65             70             75

```

&lt;210&gt; 171

&lt;211&gt; 572

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 171

```

tgcagattct gtggttatac tcaactcctca tcccaaagaa tgaaatttac cactctcctc 60
ttcttggcag ctgtagcagg ggccttggtc tatgctgaag atgcctcctc tgactcgacg 120

```



```

gggtgctgac ctgcccagga agctgggacc tctaagccta atgaagagat ctcaggtcca 180
gcagaaccag cttcaccccc agagacaacc acaacagccc aggagacttc ggcggcagca 240
gttcagggga cagccaaggt cacctcaagc aggcaggaac taaaccccct gaaatccata 300
gtggagaaaa gtatcttact aacagaacaa gcccttgcaa aagcaggaaa aggaatgcac 360
ggagggcgtgc caggtggaaa acaattcatc gaaaatggaa gtgaatttgc aaaaaatta 420
ctgaagaaat tcagtctatt aaaaccatgg gcatgagaag ctgaaaagaa tgggatcatt 480
ggacttaaag ccttaaatac cctttagtagc cagagytatt aaaacgaaag catccaaaaa 540
aaaaaaaaa aaaaaaaaaa aaaaaaaaaa aa 572

```

&lt;210&gt; 172

&lt;211&gt; 138

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 172

```

Met Lys Phe Thr Thr Leu Leu Phe Leu Ala Ala Val Ala Gly Ala Leu
  1                      5                      10                     15

```

```

Val Tyr Ala Glu Asp Ala Ser Ser Asp Ser Thr Gly Ala Asp Pro Ala
                20                      25                     30

```

```

Gln Glu Ala Gly Thr Ser Lys Pro Asn Glu Glu Ile Ser Gly Pro Ala
    35                      40                      45

```

```

Glu Pro Ala Ser Pro Pro Glu Thr Thr Thr Thr Ala Gln Glu Thr Ser
    50                      55                      60

```

```

Ala Ala Ala Val Gln Gly Thr Ala Lys Val Thr Ser Ser Arg Gln Glu
    65                      70                      75                     80

```

```

Leu Asn Pro Leu Lys Ser Ile Val Glu Lys Ser Ile Leu Leu Thr Glu
                85                      90                      95

```

```

Gln Ala Leu Ala Lys Ala Gly Lys Gly Met His Gly Gly Val Pro Gly
    100                      105                     110

```

```

Gly Lys Gln Phe Ile Glu Asn Gly Ser Glu Phe Ala Gln Lys Leu Leu
    115                      120                     125

```

```

Lys Lys Phe Ser Leu Leu Lys Pro Trp Ala
    130                      135

```

&lt;210&gt; 173

&lt;211&gt; 1223

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 173

```

ccttgttcca cgtagctggc aagggtcttca ttcacttgcc actgctagtc ttccaaccct 60
tctggacttt ctttgccttt gtcttgtttt ggggtgactg gatcatgaca cttctttttc 120
ttggcactac cggcagtcct gttcagaatg agcaaggcct tgtggagttc aaaattttctg 180
ggcctctgca gtacatgttg tggatccatg tgggtgggcct gatttggatc agtgaattta 240
ttctagcatg tcagcagatg acagtggcag gagctgtggt aacatactat ttactaggg 300
ataaaaggaa tttgccattt acacctattt tggcatcagt aaatcgctt atycgttacc 360
acctaggtac ggtggcaaaa ggatctttca ttatcacatt agtcaaaatt ccgcaatga 420
tccttatgta tattcacagt cagctcaaag gaaaggaaaa tgcttgtgca cgatgtgtgc 480
tgaaatcttg catttggtgc ctttggtgtc ttgaaaagtg cctaaattat ttaaatcaga 540
atgcatacac agccacagct atcaacagca ccaacttctg cacctcagca aaggatgcct 600
ttgtcattct ggtggagaat gctttgcgag tggctaccat caacacagta ggagatttta 660

```

```

tggtattcct tggcaagggt ctgatagtct gcagcacagg tttagctggg attatgctgc 720
tcaactacca gcaggactac acagtatggg tgctgcctct gatcatcgtc tgccctcttg 780
ctttcctagt cgttcattgc ttctgtctta tttatgaaat ggtagtggat gtattattct 840
kgkgttttgc cattgawaca aaatacaatg atgggmccc tggcagagaa ttctatatgg 900
ataaagtgcg gatggagttt gtggaaaaca gtaggaaagc aatgaaagaa gctggtaagg 960
gaggcgctgc tgattccaga gagctaaagc cgatgctgaa gaaaagggtga ctggtctcat 1020
gagccctgaa gaatgaactc agaggaggtt gtttacatga ggttctcca ctcaccagct 1080
gttgagagtc tgcgattatg aagagcagga tcttattact tcaatgaaag catgtaacaa 1140
gtttctcaaa ccaccaacag ccaagtggat ttggtacagt gcggctgtct aataaataat 1200
caaaagcaaa aaaaaaaaaa aaa 1223

```

<210> 174  
 <211> 301  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> UNSURE  
 <222> (246)..(247)

<220>  
 <221> UNSURE  
 <222> (251)

<220>  
 <221> UNSURE  
 <222> (258)

<400> 174  
 Met Thr Leu Leu Phe Leu Gly Thr Thr Gly Ser Pro Val Gln Asn Glu  
 1 5 10 15  
 Gln Gly Phe Val Glu Phe Lys Ile Ser Gly Pro Leu Gln Tyr Met Trp  
 20 25 30  
 Trp Tyr His Val Val Gly Leu Ile Trp Ile Ser Glu Phe Ile Leu Ala  
 35 40 45  
 Cys Gln Gln Met Thr Val Ala Gly Ala Val Val Thr Tyr Tyr Phe Thr  
 50 55 60  
 Arg Asp Lys Arg Asn Leu Pro Phe Thr Pro Ile Leu Ala Ser Val Asn  
 65 70 75 80  
 Arg Leu Ile Arg Tyr His Leu Gly Thr Val Ala Lys Gly Ser Phe Ile  
 85 90 95  
 Ile Thr Leu Val Lys Ile Pro Arg Met Ile Leu Met Tyr Ile His Ser  
 100 105 110  
 Gln Leu Lys Gly Lys Glu Asn Ala Cys Ala Arg Cys Val Leu Lys Ser  
 115 120 125  
 Cys Ile Cys Cys Leu Trp Cys Leu Glu Lys Cys Leu Asn Tyr Leu Asn  
 130 135 140  
 Gln Asn Ala Tyr Thr Ala Thr Ala Ile Asn Ser Thr Asn Phe Cys Thr  
 145 150 155 160  
 Ser Ala Lys Asp Ala Phe Val Ile Leu Val Glu Asn Ala Leu Arg Val

|   |     |     |
|---|-----|-----|
| 165   | 170 | 175 |
| Ala Thr Ile Asn Thr Val Gly Asp Phe Met Leu Phe Leu Gly Lys Val |     |     |
| 180   | 185 | 190 |
| Leu Ile Val Cys Ser Thr Gly Leu Ala Gly Ile Met Leu Leu Asn Tyr |     |     |
| 195   | 200 | 205 |
| Gln Gln Asp Tyr Thr Val Trp Val Leu Pro Leu Ile Ile Val Cys Leu |     |     |
| 210   | 215 | 220 |
| Phe Ala Phe Leu Val Ala His Cys Phe Leu Ser Ile Tyr Glu Met Val |     |     |
| 225   | 230 | 235 |
| Val Asp Val Leu Phe Xaa Xaa Phe Ala Ile Xaa Thr Lys Tyr Asn Asp |     |     |
| 245   | 250 | 255 |
| Gly Xaa Pro Gly Arg Glu Phe Tyr Met Asp Lys Val Leu Met Glu Phe |     |     |
| 260   | 265 | 270 |
| Val Glu Asn Ser Arg Lys Ala Met Lys Glu Ala Gly Lys Gly Gly Val |     |     |
| 275   | 280 | 285 |
| Ala Asp Ser Arg Glu Leu Lys Pro Met Leu Lys Lys Arg             |     |     |
| 290   | 295 | 300 |

&lt;210&gt; 175

&lt;211&gt; 2460

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 175

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ctccgaatct gacggggagg agaacatcgg ctggagcacg gtgaacctgg acgaggagaa 1560
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<210> 176

<211> 563

<212> PRT

<213> Homo sapiens

<400> 176

Met Thr Ala Thr Arg Pro Leu Pro Ala Pro Lys Leu Ala Gln Ala Met  
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Pro Pro His Ser Ala Ser Arg Glu Thr Asn Lys Leu Arg Ala Lys Leu  
 20 25 30

Gly Leu Lys Pro Leu Glu Val Asn Ala Ile Lys Lys Glu Ala Gly Thr  
 35 40 45

Lys Glu Glu Pro Val Thr Ala Asp Val Ile Asn Pro Met Ala Leu Arg  
 50 55 60

Gln Arg Glu Glu Leu Arg Glu Lys Leu Ala Ala Lys Glu Lys Arg  
 65 70 75 80

Leu Leu Asn Gln Lys Leu Gly Lys Ile Lys Thr Leu Gly Glu Asp Asp  
 85 90 95

Pro Trp Leu Asp Asp Thr Ala Ala Trp Ile Glu Arg Ser Arg Gln Leu  
 100 105 110

Gln Lys Glu Lys Asp Leu Ala Glu Lys Arg Ala Lys Leu Leu Glu Glu  
 115 120 125

Met Asp Gln Lys Phe Gly Val Ser Thr Leu Val Glu Glu Glu Phe Gly  
 130 135 140

Gln Arg Arg Gln Asp Leu Tyr Ser Ala Arg Asp Leu Gln Gly Leu Thr  
 145 150 155 160

Val Glu His Ala Ile Asp Ser Phe Arg Glu Gly Glu Thr Met Ile Leu  
 165 170 175

Thr Leu Lys Asp Lys Gly Val Leu Gln Glu Glu Glu Asp Val Leu Val  
 180 185 190

Asn Val Asn Leu Val Asp Lys Glu Arg Ala Glu Lys Asn Val Glu Leu  
 195 200 205

Arg Lys Lys Lys Pro Asp Tyr Leu Pro Tyr Ala Glu Asp Glu Ser Val  
 210 215 220  
 Asp Asp Leu Ala Gln Gln Lys Pro Arg Ser Ile Leu Ser Lys Tyr Asp  
 225 230 235 240  
 Glu Lys Leu Glu Gly Glu Arg Pro His Ser Phe Arg Leu Glu Gln Gly  
 245 250 255  
 Gly Thr Ala Asp Gly Leu Arg Glu Arg Glu Leu Glu Glu Ile Arg Ala  
 260 265 270  
 Lys Leu Arg Leu Gln Ala Gln Ser Leu Ser Thr Val Gly Pro Arg Leu  
 275 280 285  
 Ala Ser Glu Tyr Leu Thr Pro Glu Glu Met Val Thr Phe Lys Lys Thr  
 290 295 300  
 Lys Arg Arg Val Lys Lys Ile Arg Lys Lys Glu Lys Glu Val Val Val  
 305 310 315 320  
 Arg Ala Asp Asp Leu Leu Pro Leu Gly Asp Gln Thr Gln Asp Gly Asp  
 325 330 335  
 Phe Gly Ser Arg Leu Arg Gly Arg Gly Arg Arg Arg Val Ser Glu Val  
 340 345 350  
 Glu Glu Glu Lys Glu Pro Val Pro Gln Pro Leu Pro Ser Asp Asp Thr  
 355 360 365  
 Arg Val Glu Asn Met Asp Ile Ser Asp Glu Glu Glu Gly Gly Ala Pro  
 370 375 380  
 Pro Pro Gly Ser Pro Gln Val Leu Glu Glu Asp Glu Ala Glu Leu Glu  
 385 390 395 400  
 Leu Gln Lys Gln Leu Glu Lys Gly Arg Arg Leu Arg Gln Leu Gln Gln  
 405 410 415  
 Leu Gln Gln Leu Arg Asp Ser Gly Glu Lys Val Val Glu Ile Val Lys  
 420 425 430  
 Lys Leu Glu Ser Arg Gln Arg Gly Trp Glu Glu Asp Glu Asp Pro Glu  
 435 440 445  
 Arg Lys Gly Ala Ile Val Phe Asn Ala Thr Ser Glu Phe Cys Arg Thr  
 450 455 460  
 Leu Gly Glu Ile Pro Thr Tyr Gly Leu Ala Gly Asn Arg Glu Glu Gln  
 465 470 475 480  
 Glu Glu Leu Met Asp Phe Glu Arg Asp Glu Glu Arg Ser Ala Asn Gly  
 485 490 495  
 Gly Ser Glu Ser Asp Gly Glu Glu Asn Ile Gly Trp Ser Thr Val Asn  
 500 505 510  
 Leu Asp Glu Glu Lys Gln Gln Gln Asp Val Arg Ala Thr Pro Leu Gly  
 515 520 525

Gly Gly Arg Leu Gly Val Leu Lys Leu Glu Met Ser Thr Gly Leu Gly  
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Val Gln Ser Leu Ser Leu Leu Ile Gln Ser Gly Leu Cys Arg Pro Pro  
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Arg Ala Ile

<210> 177  
 <211> 1790  
 <212> DNA  
 <213> Homo sapiens

<400> 177  
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 agagacattt ccaattttca tgggagtcag taagatagag atgatgaaaa ttcagagtgt 180  
 tcaaagaaag aggaggcctc atcagttgat agaataatac acagattgtc taatctcagt 240  
 tttcttctact tttctaccca ttacagtggg aaaaagaacc cttaaggaag ccagtgtctc 300  
 tcaacattgg ttacaaaacc atcagtgcca gcacttaatt taaaatcttc tgaaaatcca 360  
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 cagtttgttg acctagttaa ttgattcttt ccatttttcta tactattcac cagcatatca 540  
 aagatgcttc ttccctaactc tgatttccag agtaactgtg ctatcagctt ttcatactaa 600  
 gaactagggt tttacctttt cacatttctt gcctcctacc cagttcgtaa gccaaattag 660  
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 gaacttgccc aggtatgagc cagcatttat taccactcat tctagaaggt gccagttagg 840  
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 ccacatttct cttttatatg gaacaagact tttcatttgc ggctggcctt ctcactagct 960  
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<210> 178  
 <211> 115  
 <212> PRT  
 <213> Homo sapiens

<400> 178  
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Phe Phe Phe Leu Arg Pro Phe Leu Ala Leu Ala Glu Leu Leu Pro Leu  
 20 25 30

Thr Ile Asn Leu Ser Asn Ser Ala Glu Ser Leu Gln Phe Thr Ala Leu

35                      40                      45  
 Asn Pro Ser Leu Gln Thr Lys Ala Asn Leu Met Ser Ser Asn Ser Tyr  
     50                      55                      60  
 Asn Ser Leu Leu Ser Gln Phe Arg Leu Gln Arg Leu His Leu Arg Gly  
     65                      70                      75                      80  
 Asn Leu Lys Asn Lys Gln Cys Ser Ile Ser Val His Ile Lys Gly Thr  
                     85                      90                      95  
 Ser Asn Arg Asn Leu Ser Leu Leu Leu Ser Leu Cys Tyr Trp Thr Leu  
                     100                      105                      110  
 Ser Ser Arg  
                     115

&lt;210&gt; 179

&lt;211&gt; 2026

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 179

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 cccaccatt gccctatggt gggcagatga attccagaaa ccctcaggga gccaggataa 180  
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 aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaa 2026

&lt;210&gt; 180

<211> 52  
 <212> PRT  
 <213> Homo sapiens

<400> 180

Met Leu Gln Arg Asn Leu Arg Ser Val Asp Arg Ile Ser Phe Ile Phe  
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 Leu Leu Leu Leu Leu Thr Ile Thr Phe Pro Val Pro Ser Pro Ser Ile  
 20 25 30  
 Arg Ser Gln Ser Arg Gly Leu Phe Met Val Ile Ser Gly Gly Val Val  
 35 40 45  
 Gln Pro Phe Gln  
 50

<210> 181  
 <211> 1138  
 <212> DNA  
 <213> Homo sapiens

<400> 181

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 gagcgccatt gacaagcaat ggggaagaaa cagaaaaaca agagcgaaga cagcaccaag 180  
 gatgacattg atcttgatgc cttggctgca gaaatagaag gagctgggtg tgccaaagaa 240  
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 gaagatgata tcctgaaaga actggaagaa ttgtcttttg aagctcaagg catcaaagct 360  
 gacagagaaa ctgttgagc gaagccaaca gaaaacaat aagaggaatt cacctcaaaa 420  
 gataaaaaaa agaaaggaca gaagggcaaa aaacagagtt ttgatgataa tgatagcgaa 480  
 gaattggaag ataaagattc aaaatcaaaa aagactgcaa aaccgaaagt ggaaatgtac 540  
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 caatctaaaa ggacagaaaa aaaatcagaa aaacaagcca ggctctaaca tagaaagtgg 780  
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 gaaagataag aagaaaaaga aaggagaaaa ggaagaaaaa gagaaaaaaa aaaaaaaa 1138

<210> 182  
 <211> 209  
 <212> PRT  
 <213> Homo sapiens

<400> 182

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 1 5 10 15  
 Ile Asp Leu Asp Ala Leu Ala Ala Glu Ile Glu Gly Ala Gly Ala Ala  
 20 25 30  
 Lys Glu Gln Glu Pro Gln Lys Ser Lys Gly Lys Lys Lys Lys Glu Lys  
 35 40 45  
 Lys Lys Gln Asp Phe Asp Glu Asp Asp Ile Leu Lys Glu Leu Glu Glu



50                      55                      60  
 Leu Ser Leu Glu Ala Gln Gly Ile Lys Ala Asp Arg Glu Thr Val Ala  
 65                      70                      75                      80  
 Val Lys Pro Thr Glu Asn Asn Glu Glu Glu Phe Thr Ser Lys Asp Lys  
 85                      90                      95  
 Lys Lys Lys Gly Gln Lys Gly Lys Lys Gln Ser Phe Asp Asp Asn Asp  
 100                      105                      110  
 Ser Glu Glu Leu Glu Asp Lys Asp Ser Lys Ser Lys Lys Thr Ala Lys  
 115                      120                      125  
 Pro Lys Val Glu Met Tyr Ser Gly Ser Asp Asp Asp Asp Asp Phe Asn  
 130                      135                      140  
 Lys Leu Pro Lys Lys Ala Lys Gly Lys Ala Gln Lys Ser Asn Lys Lys  
 145                      150                      155                      160  
 Trp Asp Gly Ser Glu Glu Asp Glu Asp Asn Ser Lys Lys Ile Lys Glu  
 165                      170                      175  
 Arg Ser Arg Ile Asn Ser Ser Gly Glu Ser Gly Asp Glu Ser Asp Glu  
 180                      185                      190  
 Phe Leu Gln Ser Lys Arg Thr Glu Lys Lys Ser Glu Lys Gln Ala Arg  
 195                      200                      205

Ser

<210> 183  
 <211> 912  
 <212> DNA  
 <213> Homo sapiens

<400> 183  
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 tgtgtgcacc tgtctgcag tttgaggcag atgattttta accagcatct atagacactt 180  
 cctgtgaagg agagcttcaa gttggcaaag gagatgaagt cacaattaca ctgccacata 240  
 tccctagctg agggcagcag taaaatccag gcccgaaatg aacagcagcc cactcgtcct 300  
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 aacaccctca gaaatgactt gcagttgagt gagtytgga gtgacagtga tgactagtgc 720  
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 gctytggaac tctcacatat tcaagtcttt aacttagtgg tgatgggtga aaaaaaaaaa 900  
 aaaaaaaaaa aa 912

<210> 184  
 <211> 167  
 <212> PRT  
 <213> Homo sapiens

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (114)

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (120)

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (123)..(124)

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (148)

&lt;220&gt;

&lt;221&gt; UNSURE

&lt;222&gt; (161)

&lt;400&gt; 184

Met Lys Ser Gln Leu His Cys His Ile Ser Leu Ala Glu Gly Ser Ser  
 1 5 10 15

Lys Ile Gln Ala Arg Met Glu Gln Gln Pro Thr Arg Pro Pro Gln Thr  
 20 25 30

Ser Gln Pro Pro Pro Pro Pro Pro Pro Met Pro Phe Arg Ala Pro Thr  
 35 40 45

Lys Pro Pro Val Gly Pro Lys Thr Ser Pro Leu Lys Asp Asn Pro Ser  
 50 55 60

Pro Glu Pro Gln Leu Asp Asp Ile Lys Arg Glu Leu Arg Ala Glu Val  
 65 70 75 80

Asp Ile Ile Glu Gln Met Ser Ser Ser Ser Gly Ser Ser Ser Ser Asp  
 85 90 95

Ser Glu Ser Ser Ser Gly Ser Asp Asp Asp Ser Ser Ser Ser Gly Gly  
 100 105 110

Glu Xaa Asn Gly Pro Ala Ser Xaa Pro Gln Xaa Xaa His Gln Gln Pro  
 115 120 125

Tyr Asn Ser Arg Pro Ala Val Ala Asn Gly Thr Ser Arg Pro Gln Gly  
 130 135 140

Ser Asn Gln Xaa Met Asn Thr Leu Arg Asn Asp Leu Gln Leu Ser Glu  
 145 150 155 160

Xaa Gly Ser Asp Ser Asp Asp  
 165

&lt;210&gt; 185

&lt;211&gt; 4582

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 185

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teccatcatg acatctcctc attcacctgg agcatctggg aatatggaga gaatcactag 180
tctgtgctc atgggggagg aaaacaatgt ggttcataac cagaaaagtag aaattctgag 240
aaaaatgtta cagaaagaac aggaacggct acagttattg caggaagatt acaaccgaac 300
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caggactgac tgtagcagtg gagatgcttc tcggcccagt agtgacaatg cagatagtcc 540
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| Gly | Pro | Lys | Glu | Arg | Ile | Tyr | Leu | Glu | Glu | Asn | Pro | Glu | Lys | Ser | Glu |
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| Thr | Ile | Gln | Asp | Thr | Asp | Thr | Gln | Ser | Leu | Val | Gly | Ser | Pro | Ser | Thr |
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| Glu | His | Glu | Gln | Ile | Asn | Gly | Gln | Cys | Ser | Cys | Phe | Gln | Ser | Ile | Glu |
|     | 195 |     |     |     |     | 200 |     |     |     |     | 205 |     |     |     |     |
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|     | 210 |     |     |     |     | 215 |     |     |     |     | 220 |     |     |     |     |
| Val | Ser | Gln | Phe | Asp | Pro | Ala | Thr | Leu | Leu | Cys | Tyr | Leu | Tyr | Ser | Asp |
| 225 |     |     |     |     | 230 |     |     |     |     | 235 |     |     |     |     | 240 |
| Leu | Tyr | Lys | His | Thr | Asn | Ser | Lys | Glu | Thr | Arg | Arg | Ile | Phe | Leu | Glu |
|     |     |     |     | 245 |     |     |     |     | 250 |     |     |     |     | 255 |     |
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|     |     |     |     | 325 |     |     |     |     | 330 |     |     |     |     | 335 |     |
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| Gln | Ile | Val | Ala | Lys | Ile | Glu | Glu | Val | Leu | Met | Xaa | Ala | Gln | Ala | Val |
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|     | 370 |     |     |     |     | 375 |     |     |     |     | 380 |     |     |     |     |
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| 385 |     |     |     |     | 390 |     |     |     |     | 395 |     |     |     |     | 400 |
| Arg | Gly | Arg | Ile | Gly | Phe | Leu | Pro | Lys | Ile | Lys | Gln | Ser | Met | Lys | Lys |
|     |     |     |     | 405 |     |     |     |     | 410 |     |     |     |     | 415 |     |
| Asp | Lys | Glu | Gly | Glu | Glu | Lys | Gly | Lys | Arg | Arg | Gly | Phe | Pro | Ser | Ile |
|     |     |     | 420 |     |     |     |     | 425 |     |     |     |     | 430 |     |     |
| Leu | Gly | Pro | Pro | Arg | Arg | Pro | Ser | Arg | His | Asp | Asn | Ser | Ala | Ile | Gly |

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|---|---------------------|-----------------|
| Arg Ala Met Glu Leu Gln Lys                                     | Ala Arg His Pro Lys | His Leu Ser Thr |
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| Pro Ser Ser Val Ser Pro Glu Pro Gln Asp Ser Ala Lys Leu Arg Gln |                     |                 |
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| Ser Met Ser Ser Val Ala Ser Gly Ala Ser Phe Ser Gln Glu Gly Gly |                     |                 |
| 500   | 505                 | 510             |
| Lys Glu Asn Asp Thr Gly Ser Lys Gln Val Gly Glu Thr Ser Ala Pro |                     |                 |
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| 690   | 695                 | 700             |
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| Trp Pro Thr Glu Arg Glu Lys Val Lys Lys Ala Ala Asp His Cys Arg<br>785 790 795 800     |     |     |
| Gln Ile Leu Asn Tyr Val Asn Gln Ala Val Lys Glu Ala Glu Asn Lys<br>805 810 815         |     |     |
| Gln Arg Leu Glu Asp Tyr Gln Arg Arg Leu Asp Thr Ser Ser Leu Lys<br>820 825 830         |     |     |
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| Ala Tyr His Ser Gly Glu Gly His Met Pro Phe Arg Thr Gly Thr Gly<br>1140 | 1145 | 1150      |
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1400

1405

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ccctgtggca ccaagtggg tgggtgacc gtgtggcagg gattgttgca mtggawtttt 2520
ggcgtgtggg aagggatgct ttttttttgt cgccayttt tcattcctgt ttttcctcag 2580
ttcccckgkg cagatgggct gtgaaattaa attggagttt tgataagaac attttaattt 2640
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ttacaggagc tgtaacatam ttaaaaaatat gaatgtatta tgtaaatatg gcttcctttac 2760
ataaaaaata aaatgtcaac actgtaaaaa aaaaaaaaaa aaaaaaaaaa aaaaaaaaaa 2820
aaaaaaaaaa aaaaaaa 2837

```

&lt;210&gt; 188

&lt;211&gt; 686

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 188

```

Met Gly Glu Lys Lys Glu Ser Lys Pro Ala Ala Thr Thr Arg Ser Ser
  1              5              10              15

```

```

Gly Gly Gly Gly Gly Gly Gly Gly Lys Arg Gly Gly Lys Lys Asp Asp
      20              25              30

```

```

Ser His Trp Trp Ser Arg Phe Gln Lys Gly Asp Ile Pro Trp Asp Asp
      35              40              45

```

```

Lys Asp Phe Arg Met Phe Phe Leu Trp Thr Ala Leu Phe Trp Gly Gly
      50              55              60

```

```

Val Met Phe Tyr Leu Leu Leu Lys Arg Ser Gly Arg Glu Ile Thr Trp
      65              70              75              80

```

```

Lys Asp Phe Val Asn Asn Tyr Leu Ser Lys Gly Val Val Asp Arg Leu
      85              90              95

```

```

Glu Val Val Asn Lys Arg Phe Val Arg Val Thr Phe Thr Pro Gly Lys
      100              105              110

```

```

Thr Pro Val Asp Gly Gln Tyr Val Trp Phe Asn Ile Gly Ser Val Asp
      115              120              125

```

```

Thr Phe Glu Arg Asn Leu Glu Thr Leu Gln Gln Glu Leu Gly Ile Glu
      130              135              140

```

```

Gly Glu Asn Arg Val Pro Val Val Tyr Ile Ala Glu Ser Asp Gly Ser
      145              150              155              160

```

```

Phe Leu Leu Ser Met Leu Pro Thr Val Leu Ile Ile Ala Phe Leu Leu
      165              170              175

```

```

Tyr Thr Ile Arg Arg Gly Pro Ala Gly Ile Gly Arg Thr Gly Arg Gly
      180              185              190

```

```

Met Gly Gly Leu Phe Ser Val Gly Glu Thr Thr Ala Lys Val Leu Lys
      195              200              205

```

```

Asp Glu Ile Asp Val Lys Phe Lys Asp Val Ala Gly Cys Glu Glu Ala
      210              215              220

```

```

Lys Leu Glu Ile Met Glu Phe Val Asn Phe Leu Lys Asn Pro Lys Gln
      225              230              235              240

```

Tyr Gln Asp Leu Gly Ala Ile Ile Pro Lys Gly Ala Ile Leu Thr Gly  
 245 250 255  
 Pro Pro Gly Thr Gly Lys Thr Leu Leu Ala Lys Ala Thr Ala Gly Glu  
 260 265 270  
 Ala Asn Val Pro Phe Ile Thr Val Ser Gly Ser Glu Phe Leu Glu Met  
 275 280 285  
 Phe Val Gly Val Gly Pro Ala Arg Val Arg Asp Leu Phe Ala Leu Ala  
 290 295 300  
 Arg Lys Asn Ala Pro Cys Ile Leu Phe Ile Asp Glu Ile Asp Ala Val  
 305 310 315 320  
 Gly Arg Lys Arg Gly Arg Gly Asn Phe Gly Gly Gln Ser Glu Gln Glu  
 325 330 335  
 Asn Thr Leu Asn Gln Leu Leu Val Glu Met Asp Gly Phe Asn Thr Thr  
 340 345 350  
 Thr Asn Val Val Ile Leu Ala Gly Thr Asn Arg Pro Gly Pro Pro Asp  
 355 360 365  
 Ile Lys Gly Arg Ala Ser Ile Phe Lys Val His Leu Arg Pro Leu Lys  
 370 375 380  
 Leu Asp Ser Thr Leu Glu Lys Asp Lys Leu Ala Arg Lys Leu Ala Ser  
 385 390 395 400  
 Leu Thr Pro Gly Phe Ser Gly Ala Asp Val Ala Asn Val Cys Asn Glu  
 405 410 415  
 Ala Ala Leu Ile Ala Ala Arg His Leu Ser Asp Ser Ile Asn Gln Lys  
 420 425 430  
 His Phe Glu Gln Ala Ile Glu Arg Val Ile Gly Gly Leu Lys Lys Lys  
 435 440 445  
 Thr Gln Val Leu Gln Pro Glu Glu Lys Lys Thr Val Ala Tyr His Glu  
 450 455 460  
 Ala Gly His Ala Val Ala Gly Trp Tyr Leu Glu His Ala Asp Pro Leu  
 465 470 475 480  
 Leu Lys Val Ser Ile Ile Pro Arg Gly Lys Gly Leu Gly Tyr Ala Gln  
 485 490 495  
 Tyr Leu Pro Lys Glu Gln Tyr Leu Tyr Thr Lys Glu Gln Leu Leu Asp  
 500 505 510  
 Arg Met Cys Met Thr Leu Gly Gly Arg Val Ser Glu Glu Ile Phe Phe  
 515 520 525  
 Gly Arg Ile Thr Thr Gly Ala Gln Asp Asp Leu Arg Lys Val Thr Gln  
 530 535 540  
 Ser Ala Tyr Ala Gln Ile Val Gln Phe Gly Met Asn Glu Lys Val Gly  
 545 550 555 560

Gln Ile Ser Phe Asp Leu Pro Arg Gln Gly Asp Met Val Leu Glu Lys  
 565 570 575

Pro Tyr Ser Glu Ala Thr Ala Arg Leu Ile Asp Asp Glu Val Arg Ile  
 580 585 590

Leu Ile Asn Asp Ala Tyr Lys Arg Thr Val Ala Leu Leu Thr Glu Lys  
 595 600 605

Lys Ala Asp Val Glu Lys Val Ala Leu Leu Leu Leu Glu Lys Glu Val  
 610 615 620

Leu Asp Lys Asn Asp Met Val Glu Leu Leu Gly Pro Arg Pro Phe Ala  
 625 630 635 640

Glu Lys Ser Thr Tyr Glu Glu Phe Val Glu Gly Thr Gly Ser Leu Asp  
 645 650 655

Glu Asp Thr Ser Leu Pro Glu Gly Leu Lys Asp Trp Asn Lys Glu Arg  
 660 665 670

Glu Lys Glu Lys Glu Glu Pro Pro Gly Glu Lys Val Ala Asn  
 675 680 685

<210> 189  
 <211> 627  
 <212> DNA  
 <213> Homo sapiens

<400> 189  
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 tgtgcggttaa atagagagtg gatggaaatt aaccctagaa aggatagttg taacttttaa 120  
 aaagttgatt aactatttcg tgtgctaatt tgagtttttc tgaatactcc aatatgggtt 180  
 cttttaacac ctgctctcag tttacaatca cctaacttcc cagcgttggg gtctttttct 240  
 ctgtctgacc ctgtcttatt tctctacaa agacatatcc tgcgctgtac ttcagatact 300  
 tttttcgagg aacatttctg atttgtggca taaagtaact gtctaaagga aatcttctga 360  
 gaggatctgg tcattttatg aaaggggcaa ttaaggggaa atggaagcag atctttttaa 420  
 gaaggagcat ttgaaattag cccaggaatc atgtccggcg agtcctgctc ttttgtacct 480  
 gggcataata gtcagccaca cagagctaga gttagttcaa gaattgtctt tcctgatcgt 540  
 gctatatattt tggaaacacg ttagatacag aggttaagatg tcaaaattct gaaatacaca 600  
 caatatagga tcaaaaaaaaa aaaaaaa 627

<210> 190  
 <211> 63  
 <212> PRT  
 <213> Homo sapiens

<400> 190  
 Met Glu Ala Asp Leu Leu Lys Lys Glu His Leu Lys Leu Ala Gln Glu  
 1 5 10 15

Ser Cys Pro Ala Ser Pro Ala Leu Leu Tyr Leu Gly Ile Ile Val Ser  
 20 25 30

His Thr Glu Leu Glu Leu Val Gln Glu Leu Ser Phe Leu Ile Val Leu  
 35 40 45

Tyr Phe Trp Lys His Val Arg Tyr Arg Gly Lys Met Ser Lys Phe

50

55

60

<210> 191  
 <211> 868  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (733)

<400> 191  
 attctgtccc tgcccttaga aaacctaataa taccaagggt gtcattgctgg caactccctg 60  
 cccagtcctg cacaagcct tggctgtgtg tggcaccct tgcctcctac cccagagcag 120  
 ctggctccat tggcttctcc ctgcaccagc cctgtcctca ggggtcagga aaaagcacac 180  
 agctttcttt cctctcctcc agaggcctgg aaggagggtg gaggtccagt aagggcctgg 240  
 ctgccttgga tttcttggtc' ctgccttgcc aactgcaccc ttagctcct gctccctgtg 300  
 accccagaac agagggtgtg ccttcctgt ctcctagaca aagcacaag ggatgccctg 360  
 cttggcttga gcctgcccac ctgaaggatt ttctctgccc caggacatt ccatccctga 420  
 atacaaggct ctaggcaact tctctctggg tggtagacac tagaatgcct ggcattagcc 480  
 ctgaaagga ggttgggtg tatgggtagt gagctagggt gggagaaagg tgggtgtgaa 540  
 aggacagatg ctagttagt tttcactcac tcattcattc attagtcaa cagtactgag 600  
 caccacctgc actagaggca gaggggtgaa caagataccc ttttgctgg ggggacgtcc 660  
 acttcccattg ggttgggtg tttccaggaa agccctcag tcctcctccc tgttctggct 720  
 gtgtgtgaag gangtgtgtg agcaggccca atcctttgca gcaagaatga gaggtcagag 780  
 tattccattg cacacgcacc ctggggctga cagactgtg cccctagcc ttcattgcatg 840  
 cccaagcact ggcagctttg cagccct 868

<210> 192  
 <211> 107  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> UNSURE  
 <222> (62)

<400> 192  
 Met Leu Val Val Val Ser Leu Thr His Ser Phe Ile Ser Ala Thr Val  
 1 5 10 15  
 Leu Ser Thr Thr Cys Thr Arg Gly Arg Gly Val Asn Lys Ile Pro Phe  
 20 25 30  
 Cys Leu Gly Gly Arg Pro Leu Pro Met Gly Leu Ala Ile Ser Arg Lys  
 35 40 45  
 Ala Pro Gln Ser Ser Ser Leu Phe Trp Leu Cys Val Lys Xaa Val Cys  
 50 55 60  
 Glu Gln Ala Gln Ser Phe Ala Ala Arg Met Arg Gly Gln Ser Ile Pro  
 65 70 75 80  
 Leu His Thr His Pro Gly Ala Asp Arg Leu Val Pro Pro Ser Leu His  
 85 90 95  
 Ala Cys Pro Ser Thr Gly Ser Phe Ala Ala Pro  
 100 105

<210> 193  
 <211> 467  
 <212> DNA  
 <213> Homo sapiens

<220>  
 <221> unsure  
 <222> (57)

<220>  
 <221> unsure  
 <222> (254)

<400> 193  
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 tcataccagc taagatgcaa gaaaggaata tttgagagca agcagccctg ttccaggggc 120  
 cccaggtatg tgtagaggcc cagtgggggt ggccacttgg tgtttctacc accccctgcc 180  
 atccagtctg gccaggtacc tacctgggag gttgggtgtac ttggcttaag tacttcatgc 240  
 tttattcagg ctgnntcccc acagcaccgg caggaaatga aggtgcactt atatgcatcc 300  
 ctgcaggaat aaagagtggg tggcctgccc agcccagcac cacagccttt ccccagccag 360  
 gagagaccac ctaaggatca aggcagctcc tgttttcttg gttctgtgac actcgagtct 420  
 gagccagccc ctcaggaatt gcctcaaaag agaaaaaaaa aaaaaaa 467

<210> 194  
 <211> 1035  
 <212> DNA  
 <213> Homo sapiens

<400> 194  
 aatctttttg ttgtcaagct tgagggtgtgg caggcttgag atctggccat acacttgagt 60  
 gacaatgaca tccactttgc ctttctctcc acagggtgtcc actcccaggt ccaactgcag 120  
 acttcgaatt cggccttcat ggccatagatg attgcaagtc aatggaagga gctgcagagg 180  
 caaatcaaac ggcagcacag ctggattctc agggctctgg ataccatcaa agccgagata 240  
 ctggctactg atgtgtctgt ggaggatgag gaagggactg gaagcccaa ggctgagggt 300  
 caactatgct acctggaagc acaaagagat gctgttgagc agatgtccct caagctgtrc 360  
 agcgagcagt ataccagcag cagcaagcga aaggaaagat ttgctgatat gtcaaaagtt 420  
 tcattcagtg ggaagcaatg ggcttctgga ctttgattca gaatatcmgg agctctggga 480  
 ttggctgatt gacatggagt cccttgtgat ggacagccac gacctgatga tgtcagagga 540  
 gcagcagcag catctttaca agcgatacag tgtggaaatg tccatcagac acctgaaaaa 600  
 gacggagctg cttagtaagg ttgaagcttt gaagaaagggt ggcgttttac taccaaatga 660  
 tctccttgaa aaagtggatt caattaatga aaaatgggaa ctrcttggg tatttgcatt 720  
 tttattactg tttgtagggt atgtgtacat tttttgcgta gtgaagtact ctgtccgatt 780  
 tctaatttga ggcacaaata tctctctctt tcaattcact acctacgttt caaacaagct 840  
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 agcttgtccc ctctcagatt ttaataatTT tggttcttta atacatgaaa aagtaagtaa 960  
 aatatgccat gtattatggg tatgcaccaa gtcaactata atacagtata tctgatatat 1020  
 aaaaaaaaaa aaaaa 1035

<210> 195  
 <211> 179  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> UNSURE  
 <222> (37)

<220>  
 <221> UNSURE

&lt;222&gt; (73)

&lt;400&gt; 195

Met Cys Leu Trp Arg Met Arg Lys Gly Leu Glu Ala Pro Arg Leu Arg  
 1 5 10 15

Phe Asn Tyr Ala Thr Trp Lys His Lys Glu Met Leu Leu Ser Arg Cys  
 20 25 30

Pro Ser Ser Cys Xaa Ala Ser Ser Ile Pro Ala Ala Ala Ser Glu Arg  
 35 40 45

Lys Ser Leu Leu Ile Cys Gln Lys Phe His Ser Val Gly Ser Asn Gly  
 50 55 60

Leu Leu Asp Phe Asp Ser Glu Tyr Xaa Glu Leu Trp Asp Trp Leu Ile  
 65 70 75 80

Asp Met Glu Ser Leu Val Met Asp Ser His Asp Leu Met Met Ser Glu  
 85 90 95

Glu Gln Gln Gln His Leu Tyr Lys Arg Tyr Ser Val Glu Met Ser Ile  
 100 105 110

Arg His Leu Lys Lys Thr Glu Leu Leu Ser Lys Val Glu Ala Leu Lys  
 115 120 125

Lys Gly Gly Val Leu Leu Pro Asn Asp Leu Leu Glu Lys Val Asp Ser  
 130 135 140

Ile Asn Glu Lys Trp Glu Leu Leu Gly Val Phe Ala Phe Leu Leu Leu  
 145 150 155 160

Phe Val Gly Tyr Val Tyr Ile Phe Cys Val Val Lys Tyr Ser Val Arg  
 165 170 175

Phe Leu Ile

&lt;210&gt; 196

&lt;211&gt; 3831

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;400&gt; 196

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 aaagaagacg gtgggatcag gagatgctgt tttggaaaga agtgagggtt agacttctcc 120  
 atgttaacca tgagcgtgac actttccccc ctgagggtcac aggacctgga tcccatggct 180  
 actgatgctt caccatggc catcaacatg acaccactg tggagcaggg tgaggagaa 240  
 gaggaatga aggacatgga ctctgaccag cagtatgaaa agccaccccc actacacaca 300  
 ggggctgact ggaagattgt cctccactta cctgaaattg agacctggct ccggatgacc 360  
 tcagagaggg tccgagacct aacctattca gtccagcagg attcggacag caagcatgtg 420  
 gatgtacatc tagttcaact aaaggacatt tgtgaagata tttctgatca tgttgagcaa 480  
 atccatgccc tccttgaaac agagttctcc cttaaagctgc tgtcttactc tgtcaacgtg 540  
 atagtggaca tccacgcagt gcagctcctc tggcaccagc ttcgagtctc agtgctggtt 600  
 ctgcgggagc gcattctgca aggtctgcag gacgccaatg gcaactacac taggcagacg 660  
 gacattctgc aagctttctc tgaagagaca aaagagggcc ggcttgattc tctaacagaa 720  
 gtggatgact caggacaatt aaccatcaaa tgttctcaaa attacttgtc tctggattgt 780  
 ggcattactg cattcgaact gtctgactac agtccaagtg aggatttgct cagtgggcta 840

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ggtgacatga cctctagcca agtcaaaacc aaaccctttg actcttggag ctacagtggag 900
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aaggtgggga atgggaacct tgaaaacaca gtcaaatttc acattaaaga aatttcttcc 1560
agcctgggaa ggcttaacga ctgctataaa gagaaatctc gacttaaaaa gccacacaag 1620
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cacaaaagca aaaaaggcca agcctcctct ccaagtcacg tcaactaggaa tgggtgagggt 1980
gtggaggcct ggtatggctc tgatgaatac ctagcactgc cctctcacct taagcagaca 2040
gaagtattgg ctttgaagtt ggaaaaccta acaaagcttc tgcctcagaa acccagagga 2100
gaaaccatcc agaataattga tgactgggaa ctgtctgaaa tgaattcaga ttctgaaatc 2160
tatccaacct atcatgtcaa aaagaagcat acaaggctag gcagggtgtc tccaagctca 2220
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cttgtgatgg acagccacga cctgatgatg tcagaggagc agcagcagca tctttacaag 3120
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gaagctttga agaaggtgg cgttttacta ccaaatgatc tccttgaaaa agtggattca 3240
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tctctcttct aattcactac ctacgtttca aacaagctat tcatgctatt atgggaaaga 3420
cactgctttt cctcttctgt tgattttttt tttttctgag cttgtccctc ctcagatttt 3480
aataattttg gttctttaat acatgaaaaa gtaagtaaaa tatgccatgt attatgggta 3540
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atgttaatat aattttattc gaaggtacat gtgagagaca tctactgttt aactatttac 3660
tgtaccctta agatgaaaag tggagttgtc actacagctt tcaagtcaca ctaaagccac 3720
caaaacaaag atgcaaatat gacccaaatc tgaattgcag aattgaaatca gcctgtgttt 3780
tgtgcctcaa tttccagctc acttttaaca aaagccaaaa aaaaaaaaaa a 3831

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&lt;210&gt; 197

&lt;211&gt; 1075

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 197

Met Leu Thr Met Ser Val Thr Leu Ser Pro Leu Arg Ser Gln Asp Leu

1

5

10

15



Asp Pro Met Ala Thr Asp Ala Ser Pro Met Ala Ile Asn Met Thr Pro  
 20 25 30  
 Thr Val Glu Gln Gly Glu Gly Glu Glu Ala Met Lys Asp Met Asp Ser  
 35 40 45  
 Asp Gln Gln Tyr Glu Lys Pro Pro Pro Leu His Thr Gly Ala Asp Trp  
 50 55 60  
 Lys Ile Val Leu His Leu Pro Glu Ile Glu Thr Trp Leu Arg Met Thr  
 65 70 75 80  
 Ser Glu Arg Val Arg Asp Leu Thr Tyr Ser Val Gln Gln Asp Ser Asp  
 85 90 95  
 Ser Lys His Val Asp Val His Leu Val Gln Leu Lys Asp Ile Cys Glu  
 100 105 110  
 Asp Ile Ser Asp His Val Glu Gln Ile His Ala Leu Leu Glu Thr Glu  
 115 120 125  
 Phe Ser Leu Lys Leu Leu Ser Tyr Ser Val Asn Val Ile Val Asp Ile  
 130 135 140  
 His Ala Val Gln Leu Leu Trp His Gln Leu Arg Val Ser Val Leu Val  
 145 150 155 160  
 Leu Arg Glu Arg Ile Leu Gln Gly Leu Gln Asp Ala Asn Gly Asn Tyr  
 165 170 175  
 Thr Arg Gln Thr Asp Ile Leu Gln Ala Phe Ser Glu Glu Thr Lys Glu  
 180 185 190  
 Gly Arg Leu Asp Ser Leu Thr Glu Val Asp Asp Ser Gly Gln Leu Thr  
 195 200 205  
 Ile Lys Cys Ser Gln Asn Tyr Leu Ser Leu Asp Cys Gly Ile Thr Ala  
 210 215 220  
 Phe Glu Leu Ser Asp Tyr Ser Pro Ser Glu Asp Leu Leu Ser Gly Leu  
 225 230 235 240  
 Gly Asp Met Thr Ser Ser Gln Val Lys Thr Lys Pro Phe Asp Ser Trp  
 245 250 255  
 Ser Tyr Ser Glu Met Glu Lys Glu Phe Pro Glu Leu Ile Arg Ser Val  
 260 265 270  
 Gly Leu Leu Thr Val Ala Ala Asp Ser Ile Ser Thr Asn Gly Ser Glu  
 275 280 285  
 Ala Val Thr Glu Glu Val Ser Gln Val Ser Leu Ser Val Asp Asp Lys  
 290 295 300  
 Gly Gly Cys Glu Glu Asp Asn Ala Ser Ala Val Glu Glu Gln Pro Gly  
 305 310 315 320  
 Leu Thr Leu Gly Val Ser Ser Ser Ser Gly Glu Ala Leu Thr Asn Ala  
 325 330 335

Ala Gln Pro Ser Ser Glu Thr Val Gln Gln Glu Ser Ser Ser Ser Ser  
 340 345 350  
 His His Asp Ala Lys Asn Gln Gln Pro Val Pro Cys Glu Asn Ala Thr  
 355 360 365  
 Pro Lys Arg Thr Ile Arg Asp Cys Phe Asn Tyr Asn Glu Asp Ser Pro  
 370 375 380  
 Thr Gln Pro Thr Leu Pro Lys Arg Gly Leu Phe Leu Lys Glu Glu Thr  
 385 390 395 400  
 Phe Lys Asn Asp Leu Lys Gly Asn Gly Gly Lys Arg Gln Met Val Asp  
 405 410 415  
 Leu Lys Pro Glu Met Ser Arg Ser Thr Pro Ser Leu Val Asp Pro Pro  
 420 425 430  
 Asp Arg Ser Lys Leu Cys Leu Val Leu Gln Ser Ser Tyr Pro Asn Ser  
 435 440 445  
 Pro Ser Ala Ala Ser Gln Ser Tyr Glu Cys Leu His Lys Val Gly Asn  
 450 455 460  
 Gly Asn Leu Glu Asn Thr Val Lys Phe His Ile Lys Glu Ile Ser Ser  
 465 470 475 480  
 Ser Leu Gly Arg Leu Asn Asp Cys Tyr Lys Glu Lys Ser Arg Leu Lys  
 485 490 495  
 Lys Pro His Lys Thr Ser Glu Glu Val Pro Pro Cys Arg Thr Pro Lys  
 500 505 510  
 Arg Gly Thr Gly Ser Gly Lys Gln Ala Lys Asn Thr Lys Ser Ser Ala  
 515 520 525  
 Val Pro Asn Gly Glu Leu Ser Tyr Thr Ser Lys Ala Ile Glu Gly Pro  
 530 535 540  
 Gln Thr Asn Ser Ala Ser Thr Ser Ser Leu Glu Pro Cys Asn Gln Arg  
 545 550 555 560  
 Ser Trp Asn Ala Lys Leu Gln Leu Gln Ser Glu Thr Ser Ser Ser Pro  
 565 570 575  
 Ala Phe Thr Gln Ser Ser Glu Ser Ser Val Gly Ser Asp Asn Ile Met  
 580 585 590  
 Ser Pro Val Pro Leu Leu Ser Lys His Lys Ser Lys Lys Gly Gln Ala  
 595 600 605  
 Ser Ser Pro Ser His Val Thr Arg Asn Gly Glu Val Val Glu Ala Trp  
 610 615 620  
 Tyr Gly Ser Asp Glu Tyr Leu Ala Leu Pro Ser His Leu Lys Gln Thr  
 625 630 635 640  
 Glu Val Leu Ala Leu Lys Leu Glu Asn Leu Thr Lys Leu Leu Pro Gln  
 645 650 655

Lys Pro Arg Gly Glu Thr Ile Gln Asn Ile Asp Asp Trp Glu Leu Ser  
 660 665 670  
 Glu Met Asn Ser Asp Ser Glu Ile Tyr Pro Thr Tyr His Val Lys Lys  
 675 680 685  
 Lys His Thr Arg Leu Gly Arg Val Ser Pro Ser Ser Ser Asp Ile  
 690 695 700  
 Ala Ser Ser Leu Gly Glu Ser Ile Glu Ser Gly Pro Leu Ser Asp Ile  
 705 710 715 720  
 Leu Ser Asp Glu Glu Ser Ser Met Pro Leu Ala Gly Met Lys Lys Tyr  
 725 730 735  
 Ala Asp Glu Lys Ser Glu Arg Ala Ser Ser Ser Glu Lys Asn Glu Ser  
 740 745 750  
 His Ser Ala Thr Lys Ser Ala Leu Ile Gln Lys Leu Met Gln Asp Ile  
 755 760 765  
 Gln His Gln Asp Asn Tyr Glu Ala Ile Trp Glu Lys Ile Glu Gly Phe  
 770 775 780  
 Val Asn Lys Leu Asp Glu Phe Ile Gln Trp Leu Asn Glu Ala Met Glu  
 785 790 795 800  
 Thr Thr Glu Asn Trp Thr Pro Pro Lys Ala Glu Met Asp Asp Leu Lys  
 805 810 815  
 Leu Tyr Leu Glu Thr His Leu Ser Phe Lys Leu Asn Val Asp Ser His  
 820 825 830  
 Cys Ala Leu Lys Glu Ala Val Glu Glu Glu Gly His Gln Leu Leu Glu  
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 850 855 860  
 Ala Ser Gln Trp Lys Glu Leu Gln Arg Gln Ile Lys Arg Gln His Ser  
 865 870 875 880  
 Trp Ile Leu Arg Ala Leu Asp Thr Ile Lys Ala Glu Ile Leu Ala Thr  
 885 890 895  
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 Val Gln Leu Cys Tyr Leu Glu Ala Gln Arg Asp Ala Val Glu Gln Met  
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 Ser Leu Lys Leu Tyr Ser Glu Gln Tyr Thr Ser Ser Ser Lys Arg Lys  
 930 935 940  
 Glu Glu Phe Ala Asp Met Ser Lys Val His Ser Val Gly Ser Asn Gly  
 945 950 955 960  
 Leu Leu Asp Phe Asp Ser Glu Tyr Gln Glu Leu Trp Asp Trp Leu Ile  
 965 970 975

Asp Met Glu Ser Leu Val Met Asp Ser His Asp Leu Met Met Ser Glu  
 980 985 990  
 Glu Gln Gln Gln His Leu Tyr Lys Arg Tyr Ser Val Glu Met Ser Ile  
 995 1000 1005  
 Arg His Leu Lys Lys Thr Glu Leu Leu Ser Lys Val Glu Ala Leu Lys  
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 Lys Gly Gly Val Leu Leu Pro Asn Asp Leu Leu Glu Lys Val Asp Ser  
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 Ile Asn Glu Lys Trp Glu Leu Leu Gly Val Phe Ala Phe Leu Leu Leu  
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 cttttgatcg caatacagaa tctctctttg aagaactgtc ttcagctggc tcaggcctaa 240  
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 tattagaaaa tacacaactg ttggaaacca aaaatgcttt gaacatagtg aagaatgatt 360  
 tgatagcaaa agtggatgaa ctgacctgtg agaaagatgt gctgcaaggg gaattggagg 420  
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 ggaaaagctcg ggcagaagct gaagatgcag ggcaaaaagc aaaagatgac gatgatagt 540  
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 atctcagacc tctggatgaa aaagatacat caatgaagct gtggtgtgct gttggagtca 1140  
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&lt;211&gt; 828

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 199

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Gly Ile Glu Asn Lys Ala Phe Asp Arg Asn Thr Glu Ser Leu Phe Glu
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Ala Asp Leu Leu Gly Met Gly Arg Glu Val Glu Asn Leu Ile Leu Glu
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Asn Thr Gln Leu Leu Glu Thr Lys Asn Ala Leu Asn Ile Val Lys Asn
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Asp Leu Ile Ala Lys Val Asp Glu Leu Thr Cys Glu Lys Asp Val Leu
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Gln Gly Glu Leu Glu Ala Val Lys Gln Ala Lys Leu Lys Leu Glu Glu
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Lys Asn Arg Glu Leu Glu Glu Leu Arg Lys Ala Arg Ala Glu Ala
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Thr Ala Gln Arg Lys Arg Phe Thr Arg Val Glu Met Ala Arg Val Leu
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 Gln Glu Lys Lys Arg Ser Ser Ile Trp Gln Phe Phe Ser Arg Leu Phe  
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 Ser Ser Ser Ser Asn Thr Thr Lys Lys Pro Glu Pro Pro Val Asn Leu  
 210 215 220  
 Lys Tyr Asn Ala Pro Thr Ser His Val Thr Pro Ser Val Lys Lys Arg  
 225 230 235 240  
 Ser Ser Thr Leu Ser Gln Leu Pro Gly Asp Lys Ser Lys Ala Phe Asp  
 245 250 255  
 Phe Leu Ser Glu Glu Thr Glu Ala Ser Leu Ala Ser Arg Arg Glu Gln  
 260 265 270  
 Lys Arg Glu Gln Tyr Arg Gln Val Lys Ala His Val Gln Lys Glu Asp  
 275 280 285  
 Gly Arg Val Gln Ala Phe Gly Trp Ser Leu Pro Gln Lys Tyr Lys Gln  
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 Val Tyr Leu Arg Pro Leu Asp Glu Lys Asp Thr Ser Met Lys Leu Trp  
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 355 360 365  
 Thr Glu Gly Ser Lys Gln Arg Ser Ala Ser Gln Ser Ser Leu Asp Lys  
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 Glu Leu Ser Ser Leu Val Trp Ile Cys Thr Ser Thr His Ser Ala Thr  
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 Lys Val Leu Ile Ile Asp Ala Val Gln Pro Gly Asn Ile Leu Asp Ser  
 420 425 430  
 Phe Thr Val Cys Asn Ser His Val Leu Cys Ile Ala Ser Val Pro Gly  
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 Ala Arg Glu Thr Asp Tyr Pro Ala Gly Glu Asp Leu Ser Glu Ser Gly  
 450 455 460  
 Gln Val Asp Lys Ala Ser Leu Cys Gly Ser Met Thr Ser Asn Ser Ser  
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 Ala Glu Thr Asp Ser Leu Leu Gly Gly Ile Thr Val Val Gly Cys Ser  
 485 490 495

Ala Glu Gly Val Thr Gly Ala Ala Thr Ser Pro Ser Thr Asn Gly Ala  
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 Ser Pro Val Met Asp Lys Pro Pro Glu Met Glu Ala Glu Asn Ser Glu  
 515 520 525  
 Val Asp Glu Asn Val Pro Thr Ala Glu Glu Ala Thr Glu Ala Thr Glu  
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 545 550 555 560  
 Val Tyr Thr Glu His Val Phe Thr Asp Pro Leu Gly Val Gln Ile Pro  
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 Glu Asp Leu Ser Pro Val Tyr Gln Ser Ser Asn Asp Ser Asp Ala Tyr  
 580 585 590  
 Lys Asp Gln Ile Ser Val Leu Pro Asn Glu Gln Asp Leu Val Arg Glu  
 595 600 605  
 Glu Ala Gln Lys Met Ser Ser Leu Leu Pro Thr Met Trp Leu Gly Ala  
 610 615 620  
 Gln Asn Gly Cys Leu Tyr Val His Ser Ser Val Ala Gln Trp Arg Lys  
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 Cys Leu His Ser Ile Lys Leu Lys Asp Ser Ile Leu Ser Ile Val His  
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 Val Lys Gly Ile Val Leu Val Ala Leu Ala Asp Gly Thr Leu Ala Ile  
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 Phe His Arg Gly Val Asp Gly Gln Trp Asp Leu Ser Asn Tyr His Leu  
 675 680 685  
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 690 695 700  
 His Asp Lys Val Trp Cys Gly Tyr Arg Asn Lys Ile Tyr Val Val Gln  
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 Pro Lys Ala Met Lys Ile Glu Lys Ser Phe Asp Ala His Pro Arg Lys  
 725 730 735  
 Glu Ser Gln Val Arg Gln Leu Ala Trp Val Gly Asp Gly Val Trp Val  
 740 745 750  
 Ser Ile Arg Leu Asp Ser Thr Leu Arg Leu Tyr His Ala His Thr Tyr  
 755 760 765  
 Gln His Leu Gln Asp Val Asp Ile Glu Pro Tyr Val Ser Lys Met Leu  
 770 775 780  
 Gly Thr Gly Lys Leu Gly Phe Ser Phe Val Arg Ile Thr Ala Leu Met  
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29

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29

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29

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Lys Ala Gly Ala Thr Pro Ser Ser Leu Phe Ser Thr Gln His Gln Ala

35

40

45


Leu Ser Arg His Pro Ile Asn His Cys  
50 55

|  |   |
|--|---|
| Applicant's or agent's<br>file reference<br>1290.1001010 | International application No.<br><b>PCT/US 00/25135</b> |
|--|---|

**INDICATIONS RELATING TO DEPOSITED MICROORGANISM  
OR OTHER BIOLOGICAL MATERIAL**

(PCT Rule 13bis)

|   |   |
|---|---|
| A. The indications made below relate to the deposited microorganism or other biological material referred to in the description on pages <u>333</u> to <u>335</u> , line <u>35</u> to <u>36</u>   |   |
| B. IDENTIFICATION OF DEPOSIT <span style="float: right;">Further deposits are identified on an additional sheet <input type="checkbox"/></span>   |   |
| Name of depositary institution<br><b>AMERICAN TYPE CULTURE COLLECTION</b>   |   |
| Address of depositary institution (including postal code and country)<br><b>American Type Culture Collection (ATCC)<br/>10801 University Boulevard<br/>Manassas, Virginia 20110-2209<br/>United States of America</b>   |   |
| Date of deposit<br><b>see Attachment A</b>  | Accession Number<br><b>see Attachment A</b> |
| C. ADDITIONAL INDICATIONS (leave blank if not applicable) <span style="float: right;">This information is continued on an additional sheet <input checked="" type="checkbox"/></span>   |   |
| In respect of those designations for which a European patent is sought, the Applicant(s) hereby informs the International Bureau that the Applicant wishes that, until the publication of the mention of the grant of a European patent or for 20 years from the date of filing if the application is refused or withdrawn or deemed to be withdrawn, the biological material deposited with the American Type Culture Collection under Accession No. <u>see Attachment A</u> |   |
| D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE (if the indications are not for all designated States)  |   |
|   |   |
| E. SEPARATE FURNISHING OF INDICATIONS (leave blank if not applicable)   |   |
| The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")  |   |
|   |   |

|  |  |
|--|--|
| <p>For receiving Office use only</p> <p><input checked="" type="checkbox"/> This sheet was received with the international application</p> <p>Authorized officer<br/></p> | <p>For International Bureau use only</p> <p><input type="checkbox"/> This sheet was received by the International Bureau on:</p> <p>Authorized officer</p> |
|--|--|

**INDICATIONS RELATING TO A DEPOSITED MICROORGANISM**  
**(Additional Sheet)**

**C. ADDITIONAL INDICATIONS (Continued)**

shall be made available as provided in ~~Rule 28(3) EPC only~~ by the issue of a sample to an expert nominated by the requester (Rule 28(4) EPC).

In respect of the designation of Australia in the subject PCT application, and in accordance with Regulation 3.25(3) of the Australian Patents Regulations, the Applicant hereby gives notice that the furnishing of a sample of the biological material deposited with the American Type Culture Collection under Accession No. ~~Attachment A~~<sup>888</sup> shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention and who is nominated in a request for the furnishing of a sample.

In respect of the designation of Canada in the subject PCT application, the Applicant hereby informs the International Bureau that the Applicant wishes that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the biological material deposited with the American Type Culture Collection under Accession No. ~~Attachment A~~<sup>888</sup> and referred to in the application to an independent expert nominated by the Commissioner.



## Attachment A

-1-

Deposit of Clones

Clones AX65\_22, BD335\_14, BG241\_1, BL187\_4, BL249\_18, BO71\_1, BO365\_2, BV51\_1, BV140\_3, BV141\_2, CC194\_4, and DA136\_11 were deposited on October 3, 1996 with the ATCC (American Type Culture Collection, 10801 University Boulevard, Manassas, Virginia 20110-2209 U.S.A.) as an original deposit under the Budapest Treaty and were given the accession number 98196, from which each clone comprising a particular polynucleotide is obtainable.

Clones AR415\_4, AS63\_29, BG160\_1, BO432\_4, BO538\_2, BR595\_4, CI490\_2, CI522\_1, CN238\_1, CO390\_1, and AY304\_1 (an additional isolate of clone AY304\_14) were deposited on October 25, 1996 with the ATCC (American Type Culture Collection, 10801 University Boulevard, Manassas, Virginia 20110-2209 U.S.A.) as an original deposit under the Budapest Treaty and were given the accession number 98232, from which each clone comprising a particular polynucleotide is obtainable. Clone AY304\_14 was deposited on October 23, 1997 with the ATCC (American Type Culture Collection, 10801 University Boulevard, Manassas, Virginia 20110-2209 U.S.A.) as an original deposit under the Budapest Treaty and was given the accession number 98561.

Clones AJ20\_2, AR440\_1, AS164\_1, AX8\_1, BD176\_3, BD339\_1, BD427\_1, BL229\_22, BV123\_16, and CH377\_1 were deposited on November 15, 1996 with the ATCC (American Type Culture Collection, 10801 University Boulevard, Manassas, Virginia 20110-2209 U.S.A.) as an original deposit under the Budapest Treaty and were given the accession number 98261, from which each clone comprising a particular polynucleotide is obtainable.

Clones BD441\_1, BD441\_2, BG102\_3, BK158\_1, BP163\_1, BZ16\_3, CC182\_1, CG109\_1 and CJ397\_1 were deposited on November 20, 1996 with the ATCC (American Type Culture Collection, 10801 University Boulevard, Manassas, Virginia 20110-2209 U.S.A.) as an original deposit under the Budapest Treaty and were given the accession number 98264, from which each clone comprising a particular polynucleotide is obtainable.

Clones AM795\_4, AT340\_1, BG132\_1, BG219\_2, BG366\_2, BV172\_2, CC247\_10, CI480\_9, CO722\_1, and CT748\_2 were deposited on December 5, 1996 with the ATCC (American Type Culture Collection, 10801 University Boulevard, Manassas, Virginia 20110-2209 U.S.A.) as an original deposit under the Budapest Treaty and were given the accession number 98271, from which each clone comprising a particular polynucleotide is obtainable.

Clones AJ1\_1, AQ73\_3, BG142\_1, BV66\_1, BV291\_3, CK201\_1, CQ331\_2, CT550\_1, CT585\_1 and CT797\_3 were deposited on December 13, 1996 with the ATCC

## Attachment A

-2-

(American Type Culture Collection, 10801 University Boulevard, Manassas, Virginia 20110-2209 U.S.A.) as an original deposit under the Budapest Treaty and were given the accession number 98278, from which each clone comprising a particular polynucleotide is obtainable.

Clones CB107\_1, CG300\_3, CJ145\_1, CJ160\_11, CO20\_1, CO223\_1, CO310\_2, CP258\_3, CW1155\_3 and CZ247\_2 were deposited on December 17, 1996 with the ATCC (American Type Culture Collection, 10801 University Boulevard, Manassas, Virginia 20110-2209 U.S.A.) as an original deposit under the Budapest Treaty and were given the accession number 98279, from which each clone comprising a particular polynucleotide is obtainable. Clone CO223\_3 was deposited on January 9, 1997 with the ATCC (American Type Culture Collection, 10801 University Boulevard, Manassas, Virginia 20110-2209 U.S.A.) as an original deposit under the Budapest Treaty and was given the accession number 98291.

Clones AM666\_1, BN387\_3, BQ135\_2, CR678\_1, CW420\_2, CW795\_2, CW823\_3, DF989\_3, DL162\_2, DL162\_1, and EC172\_1 were deposited on January 10, 1997 with the ATCC (American Type Culture Collection, 10801 University Boulevard, Manassas, Virginia 20110-2209 U.S.A.) as an original deposit under the Budapest Treaty and were given the accession number 98292, from which each clone comprising a particular polynucleotide is obtainable.

## INTERNATIONAL SEARCH REPORT

International Application No

I US 00/25135

## A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C12N15/12 C07K14/47 C12N1/21 C12N5/10 C12Q1/68  
A61K38/17

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C07K

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ, BIOSIS, STRAND

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No. |
|------------|--|-----------------------|
| X, L       | <p>WO 98 17687 A (GENETICS INST)<br/> 30 April 1998 (1998-04-30)<br/> the document throws doubt on the priority<br/> of the application<br/> abstract; claims 20-22<br/> see SEQ ID NO: 8 and 9 (pp.73-77)<br/> page 18, line 30 -page 20, line 2<br/> page 23, line 12 -page 24, line 14<br/> page 31, line 12 -page 64, line 16<br/> -----</p> | 1-11                  |

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

## \* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search

14 December 2000

Date of mailing of the international search report

30.01.01

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Oderwald, H

# INTERNATIONAL SEARCH REPORT

national application No.  
PCT/US 00/25135

## Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

## Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
  
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
  
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-11

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. Claims: 1-11

An isolated polynucleotide comprising SEQ ID NO: 41 which encodes a protein of SEQ ID NO: 42 (BG160\_1). A host cell, a process for producing said protein, a protein produced by said process, a composition comprising said protein.

2. Claims: 12, 13

An isolated polynucleotide comprising SEQ ID NO: 129. A protein encoded by said polynucleotide having amino acid sequence SEQ ID NO: 130 (C0722\_1).

F US 00/25135

Form PCT/ISA/210 (patent family annex) (July 1992)